

**CHILDREN WITH SPECIFIC LEARNING DIFFICULTIES  
OF MATHEMATICS AND READING: BEHAVIOURAL,  
EMOTIONAL, AND SOCIAL PROBLEMS  
AND RESEARCH PORTFOLIO**

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**A review of recent research in specific arithmetic  
and reading disabilities**

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## **Abstract**

This review considers prevalence rates, risk factors, neuropsychological profiles and behavioural and socioemotional problems associated with specific learning disabilities in arithmetic and reading. Both arithmetic and reading difficulties can arise from environmental, genetic, neurological and congenital factors. Consequently, a thorough assessment using neuropsychological and behavioural measures and scanning techniques can be necessary to identify the likely cause for appropriate remediation and intervention.

There is increasing evidence for three main subcategories of learning disabilities which approximate closely to the ICD-10 (1992) classification of specific reading, arithmetical and mixed scholastic disorders. The different prevalence rates and disparities in research findings on associated behavioural and socioemotional difficulties children in these subcategories experience probably reflect the arbitrary nature of the definition criteria and the various tests and measures used, some with unstandardised or outdated norms. Future research is needed using strict definition criteria and reliable and standardised tests and measures to help clarify these issues to improve remediation for these children.



## Introduction

A major problem reviewing the literature on specific developmental disorders of reading and arithmetic is the different descriptive and medical terms used to refer to these conditions (Hinshaw, 1992). The terms developmental dyscalculia and dyslexia are used extensively despite being best avoided because they both describe complex cognitive impairments in academic skills with various aetiologies. *The ICD-10 Classification of Mental and Behavioural Disorders* (ICD-10, 1992) classifies these disabilities under specific developmental disorders of scholastic skills as specific reading disorder (F81.0), specific disorder of arithmetical skills (F81.2) and mixed disorder of scholastic skills (F81.3). The arithmetical disorder refers to achievement of the basic computational skills of addition, subtraction, division and multiplication and excludes more complex mathematical skills such as calculus. The specific disorders of arithmetical and reading skills exist in terms of a discrepancy between the achievement in the specific skill, measured intelligence and chronological age while mental retardation and inadequate schooling should be excluded. However, Aster (1994) notes that the skills measured by intelligence tests also underly many skills necessary for reading and arithmetic. Siegal & Metsala (1992) draw attention to this failure of the discrepancy between measures of intelligence and measures of specific skill domains for diagnosis. Considerably more is known about children's reading disorders than arithmetical disorders, a fact noted in ICD-10 (ICD-10, 1992). This is due probably to the pervasive nature of reading in formal education and everyday life and because poor numerical skills are more socially acceptable than poor reading skills (Gordon, 1992). Papers by Rutter and Yule (1975a) and Rourke (1975) provided the motivation for increasing research interest into the nature and attributes of specific learning disabilities.

This review will consider recent research investigating prevalence rates, risk factors, neuropsychological profiles, socioemotional and behavioural problems for children with specific difficulties in arithmetic and reading skills. Finally, future directions for this research will be considered.

## **Prevalence**

Rutter, Tizard and Whitmore (1970) obtained prevalence rates of 4% for specific reading disorders. Lewis, Hitch and Walker (1994) in an epidemiological study of 9-10 year old British school children using a cutting-score approach obtained prevalence rates of 1.3% for specific arithmetic difficulties (SAD), 2.3% for arithmetic and reading difficulties combined (ARD) and 3.9% for specific reading difficulties (SRD). Sex distribution was even apart from the SRD condition in which there was a ratio of 3:1 males to females very similar to Rutter and Yule's (1975a) findings using research based rather than school based criteria. Gross-Tsur, Manor and Shalev (1996) studied a cohort of fourth-grade Israeli school children and found prevalence rates of 6.5% with developmental dyscalculia. Of these a quarter had attention deficit hyperactivity disorder (ADHD)-like symptoms and 17% were diagnosed as dyslexic with sex ratios about the same. Demographic factors included significantly lower socio-economic status for dyscalculic children who had 42% first-degree relatives with learning disabilities. Kosc (1974) using Czechoslovakian and Badian (1983) using American school children both obtained prevalence rates for developmental dyscalculia of 6.4%. This included children with combined reading and arithmetic difficulties. Klauer (1992) using West-German school-children obtained prevalence rates of 4.4% for arithmetical disorders and 3.7% for reading and spelling disorders. Dyscalculia is both rare (O'Hare, Brown & Aitken, 1991) and common (Gordon, 1992), while Lyytinen, Ahonen and Rasanen (1994) consider both mathematical (MD) and reading (RD)



disabilities to be common in children. Research suggests that males are three times more likely to have a specific reading disorder than females whereas females have a slightly greater risk for specific arithmetical disorders than males.

### **Risk factors**

Reading and arithmetical disorders can occur as a result of inadequate home environment, low socio-economic status and mental retardation (Gaddes, 1985). Kosc (1974), however, viewed dyscalculia as a structural brain dysfunction due to genetic or congenital factors. According to Gross-Tsur, Manor and Shalev (1993) developmental dyscalculia is the most common learning disability in children due to various neurological and inherited conditions including epilepsy (Aldenkamp, Alpherts, Dekker & Overweg, 1990), fragile X carriers, Turner's syndrome and phenylketonuria (Pennington, 1991). Childhood developmental disorders of ADHD syndrome (Ackerman, Anhalt & Dykman, 1986), developmental Gerstmann's syndrome (Kinsbourne & Warrington, 1963) and developmental right-hemisphere syndrome (Weintrub & Mesulam, 1983) also feature developmental dyscalculia as a significant symptom report Gross-Tsur et al. (1993). They postulate that whereas developmental reading disorders are mainly related to impaired functioning of the left-hemisphere developmental dyscalculia is influenced by dysfunction of both hemispheres but with a major contribution from the right-hemisphere.

The causes of specific developmental reading problems are still unclear and almost certainly multifactorial. The preponderance of males and the tendency for it to run in families suggest an inherited and therefore biological component (Lyytinen et al. 1994). The increased ratio of males also suggests a possible association with the Y chromosome or with contact to androgens during development (Rutter & Yule, 1975b). Pennington (1991) found evidence for an increased risk for reading disorders

but not arithmetical disorders in boys with sex chromosome abnormalities. Recent evidence suggests the heterogeneous nature of the genetic transmission of dyslexia (Smith, Pennington, Kimberling & Ings, 1990) and the strength of genetic transmission (Lubs, et al. 1993). There is considerable evidence for a genetic component in at least some forms of developmental dyslexia and a number of neurological, genetic and congenital factors are associated with developmental dyscalculia but this is not enough. This information needs to be transformed into more elaborate classification systems with recommendations for preventative and remedial interventions (Childs & Finucci, 1983).

Thorough neuropsychological and behavioural assessments should help to distinguish between children who have primarily emotional or environmental problems and those with neurological impairments of reading or arithmetical skills and also provide information for intervention and remedial strategies.

### **Neuropsychological profiles**

A series of studies undertaken by Rourke and his colleagues over the last two decades have investigated the neuropsychological validation of learning disordered subtypes and associated psychosocial and behavioural problems (Rourke & Finlayson, 1978, Rourke & Strang, 1983, Rourke & Fuerst, 1991, Rourke, 1991, and Rourke, 1993). This group of researchers has identified three distinct subtypes of learning disability in children with two of the profiles associated with arithmetical disabilities, a specific type and a combined reading and arithmetic type. From this they argue that there are two distinct patterns of neuropsychological abilities necessary for normal performance in mechanical arithmetic. Rourke (1993) describes a series of studies originally with three groups, including the specific reading impaired children. He describes two main subtypes of children with equally impaired arithmetical skills using both qualitative



and quantitative measures as (1) the nonverbal learning disability syndrome (NLD), which results in certain patterns of impairment in mechanical arithmetic and behavioural and socioemotional functioning. The second group (R-S), have academic difficulties with both reading and arithmetic but do not have any particular behavioural or socioemotional problems. Rourke develops his theory that children whose arithmetical skills are exceptionally poor compared to single-word reading and spelling (NLD) is related to a large number of neurological conditions of childhood and developmental disabilities due to probable brain dysfunction. Rourke describes 'disordered myelinization' and/or myelin functioning as a final common pathway to the NLD syndrome (Rourke, 1989, Rourke, 1993), which is related to right-hemisphere dysfunction compared to dysfunctional left-hemispheres of the other two groups studied (Rourke & Finlayson, 1978). The NLD children have neuropsychological impairments mainly in tactile and visual perception, attention and memory processes resulting in academic problems in mechanical arithmetic, mathematics and reading comprehension, but relative strengths in auditory and verbal skills (e.g. right-hemisphere dysfunctional).

Criteria for NLD used by Rourke (1993) included Wechsler Intelligence Scale for Children (WISC, Wechsler, 1949), Verbal IQ > Performance IQ by at least 10 points. This group was considered to have a specific disorder of arithmetic. Alternatively, the R-S group have essentially the reverse pattern of strengths and weaknesses to the NLD group with verbal and auditory deficits but strengths in tactile and visual areas (e.g. left-hemisphere dysfunctional). They were considered to have mixed disorder of scholastic skills with a WISC Verbal IQ < Performance IQ by 10 points. Lewis et al. (1994) found three main subtypes with learning disabilities in their study, comprised of

specific reading and specific arithmetic disordered groups and a combined group of both similar to Rourke's (1993) three groups.

### **Behavioural, emotional and socialisation problems.**

An association between reading difficulties and antisocial behaviour has been known for many years (Burt, 1925). Rutter and Yule (1975a) distinguished specific reading retardation (SRR) from reading backwardness (RB) and suggested that SRR had a worse prognosis than RB for reading and spelling but a better prognosis for mathematics implying some independence of these skills. Prior to this Rutter et al. (1970) in their Isle of Wight study had found a significant relationship between SRR and conduct disorder in 10 year old children and a third of those with conduct disorder were reading disordered. Sturge (1982) showed a strong association between reading retardation and antisocial behaviour in 10 years old boys but the relationship between the two conditions was complex. Rourke and Fuerst (1991) postulate three hypotheses relating to psychosocial functioning of children with learning disabilities. Hypothesis one predicts that socioemotional problems cause learning disabilities and hypothesis two predicts the reverse.

The third hypothesis is more complex and predicts that specific patterns of cognitive strengths and deficits result in specific subtypes of learning disabilities and specific types of socioemotional problems (Rourke & Fuerst, 1991).

After discussing the first two hypotheses in their book it is the third hypothesis that has provided the framework for their research. Rourke and his co-workers have used the Personality Inventory for Children (PIC, Wirt, Lachar, Klinedinst & Seat, 1984) with children who have learning disabilities and have identified several small distinct groups with particular behaviours, affect and cognitive status which are related to particular neuropsychological profiles of subtypes. The NLD condition leads to



increased risk of psychopathology (e.g. anxiety and depression) and to the development of an internalised form of socioemotional disturbance resulting in difficulties with social interactions, experiencing difficulties in novel situations (Rourke & Fuerst, 1991). See Rourke (1989) for a discussion of the dynamics involved. Rourke (1993) argues that the same neuropsychological deficits cause both serious social behavioural problems and arithmetical difficulties in children defined by the NLD profile. NLD children of thirteen years of age compared to eight year old children were found to have more deviant profile on the PIC (Wirt et al. 1984) on the psychosis, depression and social skills scales related to internalised psychopathology (Casey, Rourke & Picard, 1991). However, Shalev, Auerbach and Gross-Tsur (1995) were unable to replicate Rourke's (1993) results and found increased externalising and attentional problems in children with both arithmetic and language difficulties. Their results suggested a strong link between arithmetical disorders and attention deficit hyperactivity disorder (ADHD) (Badian, 1983). They only found increased levels of anxiety in a subgroup of children with dyscalculia and attentional problems. Finally, increased psychopathology was identified in children with mixed disorder of scholastic skills unlike Rourke's (1993) results. One reason for the different results could be that different child behaviour and personality measures were used.

While Shalev et al. (1995) used the Child Behaviour Checklist (Achenbach, 1991), Rourke (1993) and his co-workers have consistently used the PIC (Wirt et al. 1984), both measures completed by parents.

## **Conclusion**

Specific learning difficulties in arithmetic and reading rarely appear alone but usually have associated symptoms. Recent research has been exploring the nature of the relationships between specific learning disabilities, patterns of neuropsychological



strengths and deficits and associated behavioural and socioemotional problems. At present there is a lack of agreement between the different studies on specific learning difficulties with regard to these associated problems that children may experience. Therefore, systematic investigation of the validity of specific subtypes is important. Further research is important to increase knowledge and understanding of specific learning disabilities so improved assessment and management techniques can be developed for these children with regard to their education and remediation to help them achieve their potential. Research should consider academic, neuropsychological and personality factors together when studying learning disabilities rather than looking at each of these factors individually because of their inter-relationship and because intervention often needs to be directed at the socioemotional problems just as much as the educational.

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**Psychosocial problems in children with arithmetic  
and reading difficulties.**

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## **Summary**

This study aims to investigate associations between behavioural, emotional and social problems and specific learning difficulties in arithmetic and reading in children, and situation specificity. This study will also test Rourke and Fuerst's (1991) claim of two main types of arithmetic disorder. This would have implications for different types of educational intervention. O'Hare, Brown and Aitken (1991) suggest that Mathstalk (1986) might be aimed at children with relative strengths in language skills while Mathsmagic (1986) would be more suitable for children with relative strengths in visual skills. Disorders of specific arithmetic and reading skills need to be recognised early so that referral for a full assessment and management and educational help can be planned accordingly (Gordon, 1992). Lewis, Hitch and Walker (1994) found prevalence rates of 1.3% for 9-10 year old children with specific arithmetic difficulties and an equal sex distribution. The prevalence rate for children with specific reading difficulties was 3.9% with a preponderance of males.

Children from 8 to 11 years of age will be selected from primary schools in the Renfrew area and will complete a full psychometric assessment. Four groups, comprising a group with specific reading difficulties, a group with specific arithmetic difficulties, a group with both reading and arithmetic difficulties and a control group will be used, matched for sex, age and socioeconomic status. Parents and teachers will complete the appropriate Child Behaviour Checklist (Achenbach, 1991) and parents will complete the Personality Inventory for Children (Wirt et al., 1977,84). The research will increase our knowledge of the relationship between behavioural, emotional and social problems and specific learning difficulties.

It will have implications for those working with children with specific learning difficulties in arithmetic and reading and for the assessment and treatment of those children in relation to behavioural, educational, emotional and social problems.

### **Introduction**

An association between children's antisocial behaviour and reading problems has been known for many years (Burt, 1925). Rutter, Tizard and Whitmore (1970) found in 10 year old children a significant relationship between specific reading retardation (SRR) and conduct disorder. Rutter, Tizard, Yule, Graham and Whitmore (1976) postulated that delinquency can originate as a response to educational failure and emphasised the need to investigate school influences in the emergence of children's behavioural and emotional problems. Rutter and Yule (1975) provided evidence that SRR had a worse prognosis for reading and spelling than reading backwardness but a better prognosis for mathematics implying that reading and mathematical skills develop independently. Both specific reading disorder (F81.0) and specific disorder of arithmetical skills (F81.2) are included in the ICD-10 (1992). According to the ICD-10 (1992) knowledge of antecedents, course, correlates and outcome of arithmetical disorders is quite limited. Lewis et al. (1994) found a prevalence rate among 9-10 year old children of 1.3% with specific arithmetic difficulties (SAD), 2.3% with both arithmetic and reading difficulties (ARD) and 3.9% with specific reading difficulties (SRD). Children with SAD and ARD were represented equally by sex but there was a majority of males in the SRD group. According to Rourke and Fuerst (1991) children with specific arithmetic disorders often have auditory-perceptual and verbal skills within the normal range, but impaired visual-spatial and visual perceptual skills, in contrast to many children with specific reading disorders.



“Some children have associated socioemotional and behavioural problems but little is known about their characteristics or frequency. It has been suggested that difficulties in social interactions may be particularly common.” (ICD-10, 1992). Gordon (1992) noted inconsistencies in studies of children with learning disabilities and their social perception and interactional skills. Rourke and Strang (1983) consider the links between mathematical difficulties and interactional problems suggesting that “deficient (nonverbal) logical reasoning abilities, particularly under novel conditions may be partly responsible.” They argue for two main types of arithmetic impaired children with distinct neuropsychological patterns of abilities and that these differences influence their personal, social and academic lives (Group 2 and 3; Rourke & Strang, 1983). While SRR seems to be associated particularly with antisocial behaviour, difficulties in arithmetic and mathematics are associated with anxiety (Lansdown, 1978). “Rourke & Fuerst (1991) concluded that children with good reading and spelling relative to their scores on arithmetic showed much more clinically significant psychopathology than did those who show poor reading and spelling relative to their arithmetic (Rourke, 1993). In particular, the former group (in a sense those with specific deficits in arithmetic) showed much more anxiety or internalised psychopathology” (Maugham & Yule, 1994). However, results by Shalev, Auerbach and Gross-Tsur (1995) in Israel contradict Rourke’s findings (e.g. Rourke, 1993). Shalev et al. (1995) found that a combination of dyscalculia, dyslexia and low Verbal IQ scores was associated with increased psychopathology, but that anxiety was not found in most children. Similar to Badian (1983) they also found a strong association between dyscalculia and behaviour consistent with AD/HD.

Mitchell and Shepherd (1966) found that deviant behaviour at home was significantly associated with academic failure and behavioural disorders in school. Szatmari, Offord, Siegal, Finlayson and Tuff, (1990) revealed many children whose behavioural problems were only found at either home or school. This study will examine the relationship between objective test patterns, self-report and behaviour as observed by parents and teachers.

### **Aims and Hypotheses**

#### **Research Questions:**

1. Children with specific difficulties in arithmetic will experience significantly more anxiety and depression (internalising) type problems and social interaction problems than either children with specific reading difficulties or both arithmetic and reading difficulties.
2. Children with specific difficulties in reading will manifest significantly more antisocial (externalising) behavioural problems than children with specific arithmetic problems and both arithmetic and reading difficulties.
3. Children with specific difficulties in either arithmetic or reading or both will manifest significantly more behavioural and emotional problems at school but not at home.
4. Children with specific arithmetic difficulties will show either one or other of the neuropsychological profiles found by Rourke & Fuerst (1991).

### **Plan of Investigation**

#### **Subjects**

Children between the ages of 8 and 11 years attending schools in the Renfrew Education area meeting the research criteria.

**Group SA:** 20 children with specific arithmetic difficulties.



(Verbal IQ > Performance IQ by 10 points or more).

**Group SR:** 20 children with specific reading difficulties.

(Performance IQ > Verbal IQ by 10 points or more).

**Group AR:** 20 children with both specific arithmetic and reading difficulties.

(Verbal IQ = Performance IQ within 9 points).

**Group CG:** 20 children with normal age-appropriate reading and arithmetic skills and average intelligence. Verbal IQ = Performance IQ within 9 points.

Children with specific learning difficulties in arithmetic and/or reading often have a Full Scale IQ which falls in the low average or mild mental retardation range, therefore, Rourke and Fuerst (1991) used the method in brackets to define their subjects.

**Exclusion:** A child with poorly controlled epilepsy, on psychotropic medication unless used to control epilepsy or AD/HD, having a perceptual or sensory handicap, a history of psychiatric disturbance, or English as a second language.

### **Tests and Measures**

#### **1. The Wechsler Intelligence Scale for Children - III UK (WISC-III UK).**

Full Scale, Verbal and Performance IQ. Indices for Verbal Comprehension, Perceptual Organisation, Freedom from Distraction and Processing Speed.

#### **2. Wechsler Objective Reading Dimensions (WORD).** A reliable assessment in the key area of reading attainment.

#### **3. Wechsler Objective Numerical Dimensions (WOND).** A reliable assessment in the key area of numerical attainment.

The measures on the WORD and WOND can be directly linked to the ability measure of the WISC - III UK and with each other.

#### **4. Child Behavior Checklist/4-18 (Achenbach, 1991).**

The Child Behavior Checklist (CBCL) consists of a social competence scale and a behavioural problem scale, one form completed by the parent (Parent's Report Form) and the other by the teacher (Teacher's Report Form).

The syndrome scales designated as *Withdrawn, Somatic, Complaints and Anxious/Depressed* are grouped under the heading *Internalising*.

The syndrome scales designated as *Delinquent Behavior and Aggressive Behavior* are grouped under the heading *Externalising*. The CBCL is designed to provide standardised descriptions of behaviour rather than diagnostic inferences.

**5. Personality Inventory for Children (PIC)** (Wirt, Lachar, Klinedinst and Seat 1977; 1984).

This personality inventory for children is relatively convenient to administer and score, provides good coverage of various behavioural domains, has acceptable norms, and has actuarial interpretive guidelines (Wirt, Lachar, Klinedinst & Seat, 1977; 1984).

The PIC for the normal prototype includes Lie; Defensiveness; Adjustment; Achievement; Intellectual Screening; Development; Somatic Concern; Depression; Family Relationships; Delinquency; Withdrawal; Anxiety; Psychosis; Hyperactivity and Social Skills.

### **Design**

A four group cross-sectional design with the subjects, children between 8 and 11 years of age, in each group matched for age, sex and socio-economic group.

Comparisons will be made between the four groups on their PIC and the parent's and teacher's CBCL forms.

### **Procedure**

Each child will complete the WISC-III UK, the WORD and WOND psychometric assessments. The WISC-III UK, WORD and WOND should take up to 2 hours in total

to complete over 1-3 meetings. One parent (or primary careminder) will complete the CBCL (Parent's Report Form) and the PIC and the child's class teacher will complete the CBCL (Teacher's Report Form) form.

### **Settings and Equipment**

The WISC-III UK, WORD, WOND and PIC will be administered at the child's school, home or at Hawkhead Child and Family Centre.

The CBCL/4-18 Parent's Form and the Teacher's Report Form can be completed at the child's school or home.

### **Data Analysis**

The Statistical Package for the Social Sciences (SPSS) for Windows will be used to analyse the data.

1. Correlations between *Internalised* and *Externalised* profiles on PIC and CBCL and the four groups.
2. Analysis of variance between *Internalised* and *Externalised* CBCL scores and PIC scores between and within the four groups.

### **Practical Applications**

The research will have implications for children and parents, those working with children with specific learning difficulties and for the assessment, education and management of children with specific learning difficulties.

Delopmental dyscalculia is already known to be linked to a number of neurological and developmental disorders (e.g. epilepsy, phenylketonuria and Gertsman syndrome for which dyscalculia is a major criterion for diagnosis) and seems to affect both sexes equally (Gross-Tsur, Manor & Shalev, 1993). Underachievement is found in children with genetic and congenital disorders, with low intellectual ability, adverse psychological factors, low socio-economic status and with neurological disorders.



Therefore, it is important to assess children for impaired arithmetical skills because of its association with various inherited, neurological, emotional and social problems. It is also important to identify children with disorders of arithmetical skills as early as possible and to carry out a comprehensive assessment so that the most appropriate management, therapy and educational intervention can be planned which should include not only the child but their parents and teachers (Gordon, 1992). By identifying different patterns of poor performance in arithmetic and associated emotional and behavioural problems this would argue for different forms of educational and therapeutic intervention. This research could, therefore, have implications for social, theoretical and clinical issues and could show which particular learning strategies are affected in the development of arithmetical skills and which specific emotional, behavioural and social problems may be associated with difficulties in arithmetical skills. These issues could have practical implications for multidisciplinary evaluation and intervention.

### **Timescale**

The research is planned to commence at the beginning of August 1996 and should be completed in 6 months.

### **Ethical Approval**

The research protocol needs to meet the approval of Mr Bob Rutherford, Area Principal Psychologist at Psychological Services, and the Education Officer for Special Needs in the Renfrew Education Department. Mr Rutherford has given his and the Education Officer's approval to the research at this stage.

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**Children with specific learning difficulties of mathematics and reading:  
Behavioural, emotional, and social problems.**

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## **Abstract**

Behavioural, emotional, and social characteristics of children with specific learning difficulties in mathematics and reading was investigated using Rutter's teacher rating scale. 35 children between 8 and 12 years were assigned to control (n=5), specific reading difficulties (n=15), mathematics and reading difficulties (n=13) and specific mathematics difficulties (n=2) groups, according to psychometric assessment.

No significant differences were found between the four groups for total problems, internalising, externalising or hyperactive behaviour.

A small association was found between poorer mathematical achievement and some behavioural measures.

Results are discussed in terms of recent research findings and recommendations are made concerning future research.

**Keywords:** Specific learning difficulties, mathematics, reading, externalising, internalising, hyperactivity, Rutter Teacher scale.

## Introduction

That an association exists between children's reading problems and anti-social behaviour has been known for many years (Burt, 1925). For example, Rutter, Tizard & Whitmore (1970) found a significant relationship between specific reading retardation (SRR) and conduct disorder in 10 years old children. Rutter & Yule (1975) provided further evidence for the concept of SRR (e.g. a reading difficulty significantly below that expected from the child's age and general intellectual level). Considerable research has been conducted into children's reading difficulties compared to the relative paucity of work into children's mathematical problems. Knowledge of antecedents, course, correlates, and outcome of arithmetical disorders is quite limited (ICD-10, 1992). The ICD-10 (1992) noted that some children with arithmetical disorders have associated socio-emotional-behavioural problems but little is known about their characteristics or frequency and that social interaction difficulties may be particularly common (ICD-10, pp. 249). Semrud-Clikerman & Hynd (1990) noted inconsistencies in studies of children with learning disabilities and their social perception and interaction skills. Recently, some researchers (e.g. Lewis, Hitch & Walker, 1994; Rourke, 1993; Rourke & Fuerst, 1991; Shalev, Auerbach, & Gross-Tsur, 1995) have attempted to redress this imbalance. Lewis et al, (1994) found prevalence rates of 1.3% among 9-10 year old children with specific arithmetic difficulties (SAD), 2.3% with both arithmetic and reading difficulties (ARD) and 3.9% with specific reading difficulties (SRD). Children with either SAD or ARD were equally represented by sex, but there was a majority of males in the SRD group.

Rourke & Fuerst (1991) report that children with specific arithmetic disorders often have auditory-perceptual and verbal skills within the normal range, but impaired visual-spatial and visual-perceptual skills. In contrast, many children with specific reading disorders have the reverse pattern of verbal and visual strengths and weaknesses. "Rourke & Fuerst (1991)

studied children between the ages of 9 and 14 years. They concluded that children with good reading and spelling relative to their arithmetic abilities showed much more clinically significant psychopathology than did those children who show poor reading and spelling relative to their arithmetic (Rourke, 1993). In particular, the former group (e.g. those with specific deficits in arithmetic) showed much more anxiety or internalised psychopathology” (Maughan & Yule, 1994). Lansdown (1978) concluded that while SRR seems to be associated with antisocial behaviour, difficulties in arithmetic and mathematics are associated with anxiety. However, results by Shalev et al. (1995) contradict some of Rourke’s findings (e.g. Rourke, 1993). Shalev et al. (1995) compared children with dyscalculia (DC) with a normal control group and a group of children referred to psychiatry between 11-12 years of age. They found that a combination of DC, dyslexia, and low Verbal IQ scores was associated with increased psychopathology, but that anxiety was not found in most children. Similar to Badian (1983) they also found a strong association between DC and behaviour consistent with Attention Deficit/Hyperactivity Disorder (AD/HD).

Hinshaw (1992) drew attention to the variety of terms, both descriptive and medical, used to refer to children with specific developmental disorders of arithmetic and reading. The terms used in this paper will be specific reading difficulties (SRD), specific mathematical difficulties (SMD), and mathematical and reading difficulties (MRD). These three groups will approximate closely to the ICD-10 (1992) diagnostic guidelines of specific reading disorder (F81.0), specific disorder of arithmetical skills (F81.2), and mixed disorder of scholastic skills (F81.3) respectively.

The deficit in arithmetical (or mathematical) skills concerns mastery of basic computational skills of addition, subtraction, multiplication and division rather than more abstract mathematical skills such as calculus. The purpose of this study was to provide further information about behavioural, emotional, and social characteristics of children with specific



learning difficulties in mathematics and reading. It was hypothesised that children with mathematical difficulties would have significantly higher levels of hyperactivity and internalising problems. In contrast, it was hypothesised that children with specific reading difficulties would have higher levels of externalising problems. Children with mixed disorders of scholastic skills (both mathematical and reading) were hypothesised to have more psychopathology than the other groups.

## **METHOD**

### **Sample**

The sample consisted of thirty-five children between the ages of 8 and 12 years attending schools in the East Renfrewshire Education Authority. Exclusion criteria included children with poorly controlled epilepsy, on psychotropic medication, unless used to control epilepsy or AD/HD, having a sensory or perceptual handicap, a history of psychiatric disturbance, or English as a second language. The head-teachers of the participating schools identified equal numbers of children who they considered had significant learning difficulties with (a) reading, (b) mathematics, or (c) mathematics and reading.

There were 24 males (19 right-handed), and 11 females (9 right-handed). The mean age of the subjects was 10.2 years (s.d. 0.91), with a range of ages from 8 years 9 months to 11 years 10 months.

### **Selection Criteria**

Psychometric assessment was used to validate to which group the child, originally identified by the head-teacher, would be assigned. The control group was made up of children who were identified by the psychometric assessment as having no specific learning difficulties: 1. Control group. 2. Specific reading disorder (SRD). 3. Mathematics and reading difficulties (MRD). 4. Specific arithmetic disorder (SMD). Three tests were administered, the Wechsler Intelligence Scale for Children-Revised (WISC-R; Wechsler, 1974), the Wechsler Objective

Numerical Dimension (WOND, 1996), and the Wechsler Objective Reading Dimension (WORD, 1996). The WORD, comprising Basic Reading, Spelling and Reading Comprehension and the WOND, comprising numerical operations and mathematical reasoning are both based on the school curriculum and directly linked to the WISC-III (Wechsler, 1992). The psychometric link between the ability measure (WISC-III) and the attainment measures (WORD and WOND) provides a standardised and objective measurement of the relationship between the underlying cognitive abilities and accepted areas of educational attainment in reading and mathematics. This provides a key step in determining whether a child has a specific learning disability (Word, 1996), on the basis of discrepancies between observed and predicted attainment scores that are calculated from the linear regression equation of attainment on ability scores (Thorndike, 1963). Shepard (1980) was an early advocate of a predicted achievement method based on the correlation of achievement and ability. Standard scores have been endorsed by experts (Reynolds, 1985) as the most acceptable measure for calculating discrepancies as used by the WOND and WORD. The spelling standard score was not used for discrepancy analysis because spelling difficulties can exist separately to reading difficulties (Frith, 1980). The WISC-III was unavailable so the WISC-R was used. Although there is a very small difference between the two tests, it was not considered enough to make a significant difference to the results. Children were assigned to the SRD group if either their Basic Reading Standard Score (BRSS) or Reading Comprehension Standard Score (RCSS) was significantly lower than that predicted from their Full Scale IQ. Numerical Operations Standard Score and Mathematical Reasoning Standard Score needed to be commensurate with that predicted from their Full Scale IQ. Children were assigned to the SMD group if the reverse was true. Children were assigned to the MRD group if at least one WORD and one WOND standard score was significantly lower than that predicted from their Full Scale IQ.



## **Measures**

The Rutter Child Scale B for teachers (Rutter, 1967; Rutter, Tizard & Whitmore, 1970) was used to obtain measures of the behavioural, emotional and social characteristics of the children in school. This scale has been used widely in the United Kingdom and is easy to administer and score. The scale uses the wide-band terms externalising (e.g. antisocial behaviour) and internalising (e.g. neurotic behaviour). These terms are similar to the aggressive/antisocial and anxiety/fearfulness factors obtained by McGee, Williams, Bradshaw, Chapel, Robins & Silva (1985). The Child Scale B contains 26 descriptions of behaviour often shown by children. The teacher best known to the child rates the questionnaire. Each question is rated either doesn't apply (0), applies somewhat (1) or certainly applies (2). A total score of 9 or above indicates some disorder.

These children can then be designated internalising (7, 10, 17 and 23), externalising (4, 5, 15, 19, 20, 26) or undifferentiated according to their sub-scores on these items (Rutter, 1967). Individuals with emotional problems can be distinguished from those with conduct disturbance that agrees well with clinical diagnosis (Schachar, Rutter & Smith, 1981). The hyperactivity factor was obtained using the method described by McGee et al. (1985) following Schachar et al. (1981), that is, scores of 3 or more on questions 1, 3, and 16.

## **Procedure**

All the children were assessed individually at school in one session, allowing for playtime and lunch breaks. The order of test administration was randomised from one child to another. The testing was carried out between November 1996 and March 1997. The Rutter teacher scale B was completed the same day as the subject was tested.

## **RESULTS**

In general nonparametric, or distribution-free tests were used because of the small sample and the nature of the population distribution. Parametric tests were used when the variable



was measured on an interval scale. Details of sex, preferred writing hand, age and number in the control, SRD, MRD, and SMD groups are set out in table 1 below.

DESCRIPTION OF THE GROUPS

*Table 1. Comparisons of number, age, (mean and standard deviation, SD) sex, and preferred writing hand in the four groups.*

	Control		SRD		MRD		SMD	
Number	5		15		13		2	
Females	4		5		2		0	
Males	1		10		11		2	
Right-Hand	5		11		10		2	
Left-Hand	0		4		3		0	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age	9.9	0.4	10.4	1.0	10.2	0.9	9.8	1.4

Kruskal-Wallis 1-Way Anova statistical analyses were carried out to validate the categories. The results were all significant except mathematical reasoning. Basic Reading Standard Score (BRSS) by Group (3) = 13.8,  $p = 0.003$ , Reading Comprehension Standard Score (RCSS) by Group (3) = 14.7,  $p = 0.002$ , Numerical Operations Standard Score (NOSS) by Group (3) = 14.9,  $p = 0.002$  and Mathematical Reasoning Standard Score (MRSS) by Group H (3)= 6.9 (not significant). Spelling (SPSS) was also significant; Group H (3) = 14.2,  $p = 0.0026$ . Post-hoc Mann Whitney U – Wilcoxon Rank Sum W Test was performed to re-examine significant differences between groups. Significant differences were found between the controls and SRD on reading measures (BRSS)  $W=84$   $p=0.004$  (2 tailed), and between SRD and MRD on mathematical measures (MRSS)  $W=144$   $p=0.041$  (2 tailed). Other results can be found in the appendix. The small numbers in the SMD group weakened group comparisons and there were also problems with the control group.

## WISC-R IQ BY GROUP

*Table 2. Comparison of means and SD of the control, SRD, MRD, and SMD groups on the Full Scale, Verbal and Performance IQs (WISC-R).*

	Control		SRD		MRD		SMD	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Full Scale IQ	91.4	8.7	89.8	8.1	88.8	12.2	90.5	2.12
Verbal IQ	94.6	11.2	88.1	8.4	85.1	14.3	85.5	12.0
Performance IQ	89.6	4.5	94.4	10.4	93.9	10.6	99.5	9.2

Of special note, although not statistically significant, is the increasing discrepancy between a higher Performance IQ (PIQ) to Verbal IQ (VIQ) of the three groups, SRD, to MRD and then SMD. The control group has the reverse direction, a higher Verbal IQ than Performance IQ. The SMD group's higher PIQ to VIQ was surprising since poor visual-perceptual and visual-spatial abilities are associated with mathematical difficulties (e.g. Rourke, 1993), while their VIQ was lower than the SRD group, despite normal reading ability. However, generalisations of these results are difficult because of only two subjects in the SMD group.

## GROUPS AND THE RUTTER FACTORS

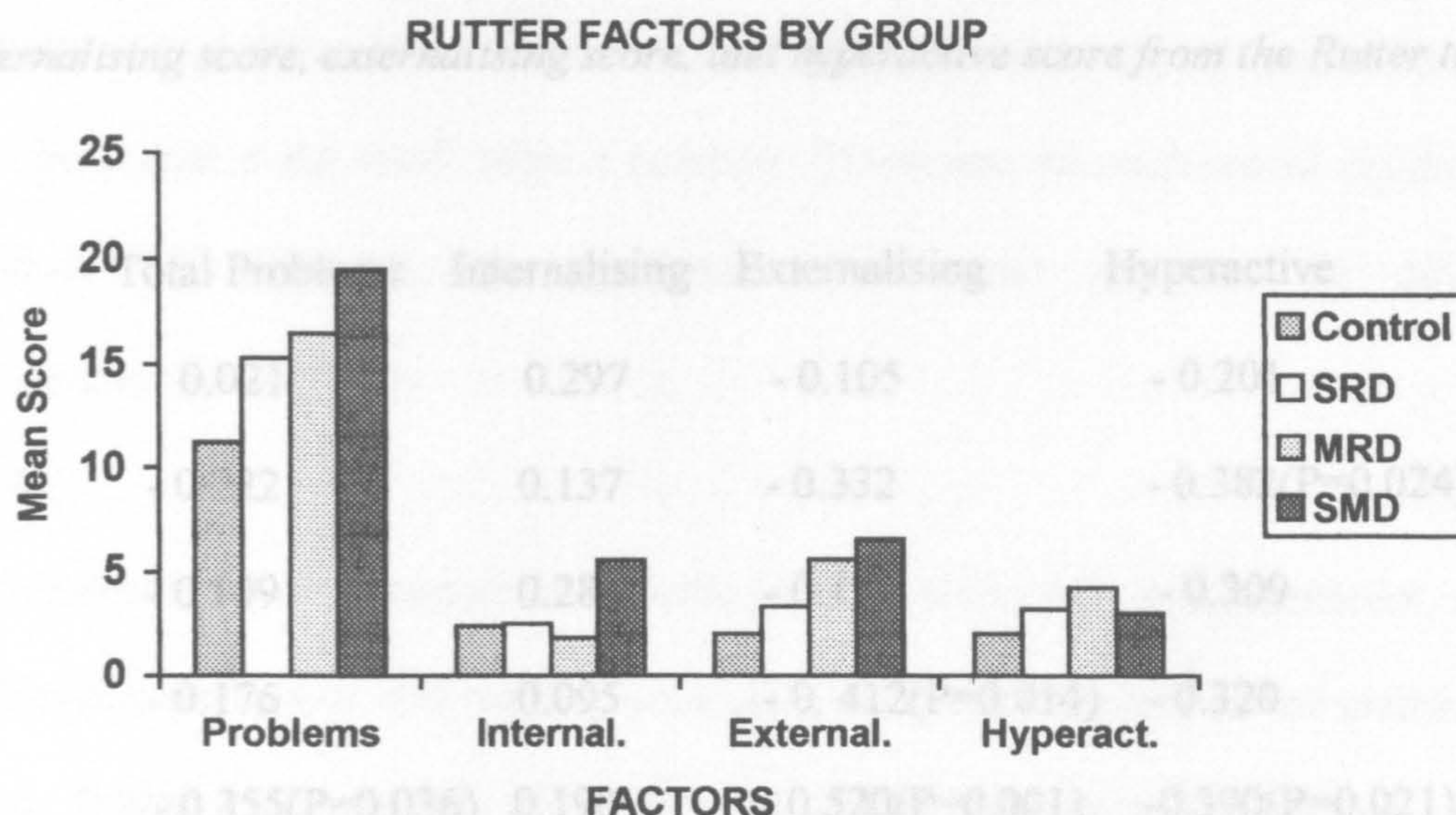
*Table 3. Comparison of means and SD of the control, SRD, MRD, and SMD groups on measures of total problem score, internalising, externalising and hyperactive behaviour from the Rutter teacher scale.*

	Control		SRD		MRD		SMD	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Total Problems	11.2	14.9	15.3	10.5	16.5	10.4	19.5	16.3
Internalising	2.4	2.6	2.5	2.2	1.8	1.3	5.5	3.5
Externalising	2.0	2.8	3.3	3.0	5.5	4.7	6.5	4.9
Hyperactive	2.0	2.3	3.2	2.2	4.2	2.1	3.0	2.8



## WORD AND WOND STANDARD SCORES AND THE RUTTER FACTORS

Table 4. Correlation analyses between each of the four standard scores and total problem score, internalising score, externalising score, and hyperactive score from the Rutter teacher scale.



Graph 1. This graph illustrates the four mean Rutter factor scores of total problems, internalising, externalising and hyperactive behaviours by group.

There were no significant statistical differences between any of the groups on any of the Rutter measures and consequently no support for any of the hypotheses. However, both the mathematical groups of MRD and SMD had higher mean scores for total problems and externalising behaviour compared to the other groups. SMD also had a higher internalising mean score and MRD a higher hyperactivity mean score compared to the other groups. The small number of subjects used, particularly in the SMD group, make interpretation and generalisation of these findings difficult. Pearson correlation analyses were carried out to test whether there was an association between the reading and mathematical standard scores from the WORD and WOND and the factors from the Rutter teacher scale B forms. Table 4 below illustrates the results of the statistical analyses.



## WORD AND WOND STANDARD SCORES AND THE RUTTER FACTORS

*Table 4. Correlation analyses between each of the five standard scores and total problem score, internalising score, externalising score, and hyperactive score from the Rutter teacher scale.*

	Total Problems	Internalising	Externalising	Hyperactive
BRSS	0.021	0.297	- 0.105	- 0.201
SPSS	- 0.222	0.137	- 0.332	- 0.382(P=0.024)
RCSS	- 0.109	0.283	- 0.194	- 0.309
MRSS	- 0.176	0.095	- 0.412(P=0.014)	- 0.320
NOSS	- 0.355(P=0.036)	0.190	- 0.520(P=0.001)	-0.390(P=0.021)

There was a significant correlation between NOSS and total problem score, externalising, and hyperactive measures and a significant correlation for MRSS and the externalising score. Finally, there was a significant correlation for SPSS and the hyperactive score. These results do not provide support for any of the hypotheses since they were not based on the group design. They do suggest a modest association between mathematical problems and total problems, externalising and hyperactive behaviour, and between spelling difficulties and hyperactive behaviour, although based upon relatively small numbers. To consider the effect of other factors such as Verbal IQ, Performance IQ or gender affecting the results above a multiple stepwise linear regression analysis was performed with the Rutter factor scores as the dependent variable. NOSS was the only measure found to be significant ( $F(1,33) = 12.21$   $p = 0.0014$ ). There was a significant effect of gender for the externalising factor score using a Mann-Whitney  $U = 76$   $p = 0.044$ . Females ( $N=11$ ) mean 2.36, S.D. 3.23, males ( $N=24$ ) mean 4.96, S.D. 3.95.

Statistical analyses of group differences (Kruskal-Wallis H) and correlations (Pearson) were carried out to test for a relationship between mathematical difficulties and visual-spatial and

social interaction problems. The WISC-R Block Design and Object Assembly were used as measures of visual-spatial skills and the WISC-R Picture Arrangement sub-test as a measure of social interaction skills. None of the results were statistically significant, although this may have been due to the small subject numbers. There was no evidence of children with mathematical difficulties having significant visual-spatial problems or difficulties understanding social situations.

## **Discussion**

The present results provide support for specific learning difficulties in mathematics, reading and combined mathematics and reading, indicating at least two sub-types of mathematical difficulties. Some mathematical difficulties (e.g. SMD) are probably due to impaired numerical processing rather than language processing deficits (Lewis et al. 1994). There was a preponderance of males in both the MRD (13:2) and SMD (2:0) groups, unlike Lewis et al. (1994) who found an equal sex ratio in both their groups with arithmetic difficulties. This was probably due to the present small sample size, different selection criteria and psychometric measures used.

The hypotheses that children with MRD would have greater psychopathology and that children with SRD would have higher levels of externalising behaviour were not supported. The hypothesis that children with SMD would have higher levels of internalising and hyperactive behaviour was not supported either. This study was, therefore, unable to replicate the findings of either Rourke (1993) or Shalev et al. (1995) concerning children with mathematical difficulties and internalising, externalising and hyperactive behaviour. Rourke (1993) found that children with difficulties in arithmetic showed increased levels of anxiety, while Shalev et al. (1995) reported increased psychopathology in children with a combination of dyscalculia, dyslexia and low Verbal IQ. They also found a strong association between dyscalculia and hyperactive behaviour, similar to Badian (1983).



The very small number of subjects in the control group and the SMD group in particular, seriously weakened the ability to make valid comparisons of group differences, using statistical analyses on measures from Rutter's teacher rating scale. This was especially true when using nonparametric tests, severely reducing the power of the analyses, and much larger group sizes are needed in future research of this kind. Meaningful statistical comparisons could only be made between the SRD and MRD groups in this present study.

Visual-spatial and social interaction problems are often related to mathematical difficulties according to Rourke (1993), but this relationship was not found in this study. However, this may have been due to using different measures of visual-spatial abilities and social skills and the smaller subject number in the present study. The mean Performance IQ of the SMD group was in the average classification while their Verbal IQ was in the low average range. Therefore, despite having specific difficulties with mathematics their visual-spatial abilities, as measured by the Performance IQ, were in the average range. In contrast, the SMD group was reading at an age appropriate level yet their Verbal IQ was lower than the SRD group, whose reading was significantly impaired. This finding possibly indicates the heterogeneous nature of children with specific learning difficulties and the small group number, from which generalisations cannot be made.

A modest, but significant association was found between lower scores on numerical operations and higher scores of total problems, externalising and hyperactive behavioural measures. There was also an association between lower mathematical reasoning scores and higher scores on externalising behaviour measures. This provided no support for any of the hypotheses but did suggest a possible link between mathematical difficulties and some types of behavioural problems. This requires further investigation. Lower scores for both numerical operations and spelling ability, which both involve written work, were associated with hyperactive behaviour. This finding raises the question of whether the motor activity



component involved in both tasks is related to hyperactive behaviour and is worthy of further research.

Further systematic research is needed to increase our understanding of possible associations between specific learning difficulties in children and behavioural, emotional and social problems because of the inconsistent research findings at present and to help the children concerned.

Future research work in this area clearly requires much larger sample sizes than those used in this present study. Researchers need to use strict selection criteria and diagnostic categories (e.g. ICD-10 or DSM-IV) which may lead to more consistent findings. Narrow band and sensitive measures of children's behaviour are also necessary, such as the Personality Inventory for Children (Wirt, Lachar, Klinedinst, & Seat, 1990) or the Child Behaviour Checklist (Achenbach, 1991).

To summarise, there were no significant differences between the control, SRD, MRD, and SMD groups on measures of total problems, externalising, internalising and hyperactive type behaviour from the Rutter teacher rating scale.

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**Patient Survey of a Direct Access Adult Clinical  
Psychology Service**

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Prepared in accordance with the submission requirements of the Division of Clinical  
Psychology Forum (see Appendix 4).

## **Introduction**

The Clinical Psychology Direct Access Service for General Practitioners (G.P.s) has provided psychological assessment and treatment to primary care patients in Ayrshire and Arran for thirteen years. The Consulting and Clinical Psychology Services (CCPS), a trading agency within the National Health Service (NHS), (Webster and Skilbeck, 1991), was formed in April 1993. The CCPS replaced the Area Clinical Psychology Services in Ayrshire and Arran following NHS changes. The CCPS has continued to provide a Direct Access Adult Clinical Psychology Service to G.P.s throughout the region. A recent survey by Sakol and Paul (1995) demonstrated the value of the Direct Access Service to G.P.s. They found that the Direct Access Service was effective in helping patients cope with their difficulties and reduced their need for medications such as anti-depressants and anxiolytics. The service reduced the number of visits patients made to their G.P.s for the problem they were referred to the Clinical Psychologist with and the need for future referral. According to Sakol and Paul (1995) these findings were consistent with Ayr and Arran Health Board policy regarding both treatment and commissioning of value for money services. However, Sakol and Paul (1995) noted that G.P.s wanted shorter waiting times and increased access to psychology services. McPherson and Feldman (1977) demonstrated wide disagreements between a Clinical Psychologist and G.P.s about which consultations were psychologically relevant. This suggests the need for closer liaison between Clinical Psychologists and G.P.s to increase suitability of patients for psychological intervention. Following the G.P. survey by Sakol and Paul (1995), this present survey aims to look at patient satisfaction with the Direct Access Clinical Psychology Service provided by the CCPS. Comparisons will be made with Sakol and Paul's (1995) survey of G.P.s to help identify both the strengths and weaknesses of the CCPS service. Consumer research aimed at users of the direct access service is important to facilitate future CCPS response and planning to meet patients' needs regarding service access.



The survey will also provide information about perceived clinical changes of the patient in various areas of personal functioning following psychological intervention. Between October 1993, when the CCPS computer database was established, and May 1995, a total of 558 patients had used and been discharged from the CCPS Direct Access Adult Clinical Psychology Service. Their difficulties included emotional, mood and behavioural problems, most commonly anxiety and depression. The aims of this survey are, therefore, to obtain the views from a sample of this group on a number of service and clinical issues.

### **Method**

A postal survey questionnaire with results presented using number of patients' ratings, percentages, graph and verbal descriptions.

### **Subjects**

From the 558 patients, 339 (60.8%) were women and 219 (39.2%) were men. The sample of 150 patients comprised 91 (60.9%) women and 59 (39.1%) men whose names were randomly generated from the computer database. Permission to approach each patient was obtained from the Clinical Psychologist who had last seen the patient for treatment. The patient's most recent treatment episode was used.

### **Materials**

A Lickert style questionnaire was developed by the author, from previous questionnaires. The questionnaire contained 14 closed questions, and two open-ended questions. This offered the respondent the chance to raise issues overlooked or highlight unfounded assumptions. A draft copy of the questionnaire was shared with the Trust prior to the survey.

### **Procedure**

Questionnaires were sent out with a covering letter explaining the survey's purpose and assuring the patient of confidentiality. A return date was provided to encourage a prompt response.

To reduce response bias, expectancy and demand characteristics (Skaife and Spall, 1995), questionnaires had stamped addressed envelopes provided and were returned to the Trust's Quality Assurance Advisor.

## **Results**

47 questionnaires (31.3%) were returned, 32 from women (35.6%) and 15 from men (25.4%).

1. 26 (55.3%) respondents were seen between 2 and 6 times by a Clinical Psychologist, 5 (10.6%) once, 9 (19.2%) were seen between 7 and 10 times and 7 (14.9%) were seen more than 10 times.

2. 38 (81%) respondents found the waiting time to see the Clinical Psychologist either very satisfactory or satisfactory and 9 (19.2%) found the waiting time not satisfactory.

3. 45 (96%) respondents found appointment times to see the Clinical Psychologist either very convenient or convenient and 2 (4%) found appointment times inconvenient.

4. 46 (98%) respondents found the location they were seen at by the Clinical Psychologist to be either very convenient or convenient while one respondent was unhappy with the location.

5. 21 (45%) respondents were very satisfied and 19 (40%) were satisfied with the help they received from the Clinical Psychologist while 6 (12.8%) were not satisfied.

6. 33 (70%) respondents perceived their mood to be either much or slightly better, 4 (8.5%) perceived their mood as slightly or much worse and 10 (21.3%) perceived no change in their mood after seeing the Clinical Psychologist.

7. 32 (68.1%) respondents perceived their confidence to be either much or slightly better after seeing the Clinical Psychologist, 11 (23.4%) perceived no change and 4 (8.5%) perceived their confidence to be slightly or much worse.

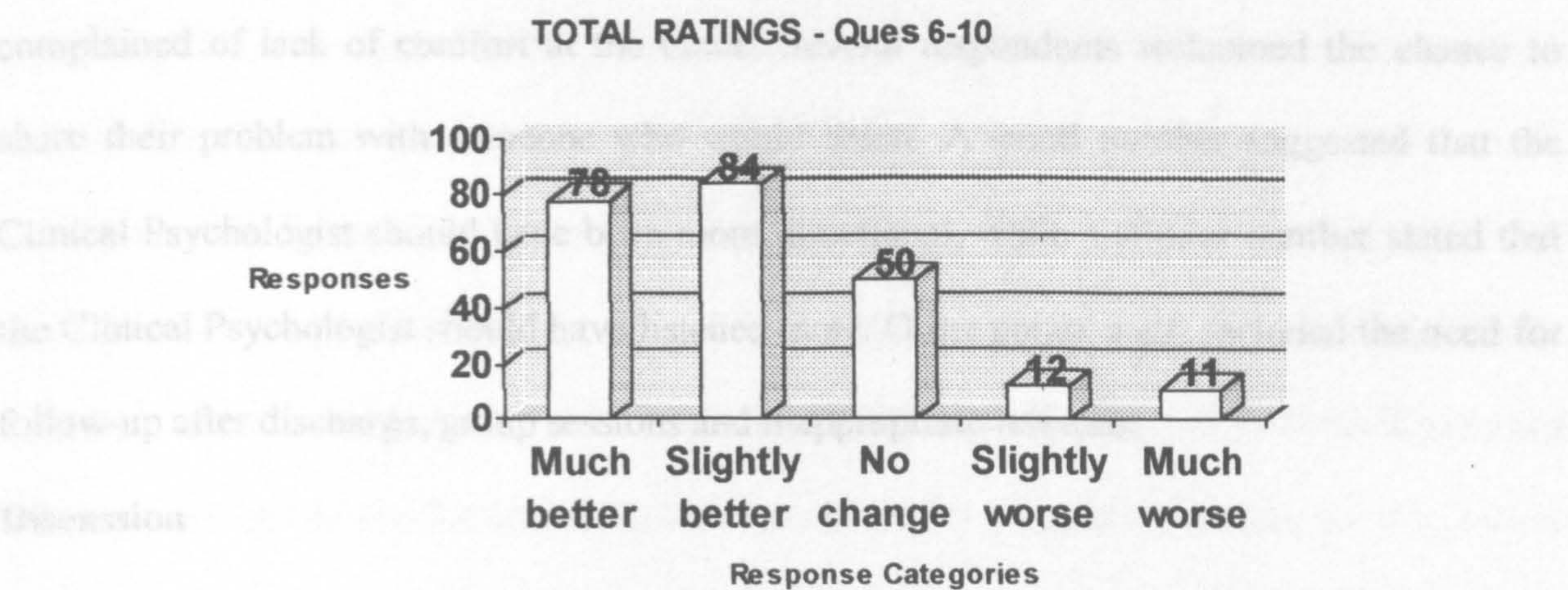
8. 36 (76.6%) respondents perceived their ability to cope with the problem they were referred with to be much or slightly better after seeing the Clinical Psychologist. 5 (10.6%) respondents perceived their ability to cope was either slightly worse or much worse while 6



(12.8%) perceived no change in their ability to cope.

9. 25 (53.2%) respondents perceived their relationships with other people to be much or slightly better after seeing the Clinical Psychologist while 4 (8.5%) perceived their relationships to be slightly or much worse and 18 (38.3%) perceived no change.

10. 36 (76.6%) respondents perceived their general well-being to be much or slightly better after seeing the Clinical Psychologist, 6 (12.85) perceived their well-being to be slightly or much worse and 5 (10.6%) perceived no change in their well-being.



**Figure 1. Total responses for all respondents across all five areas of personal functioning combined (Ques. 6-10 rated on the five point rating scale).**

11. 28 (59.6%) respondents believed that they made fewer visits to their G.P. for their referral problem, 16 (34%) felt there was no change and 2 (4.4%) believed that they made more visits to their G.P. after seeing the Clinical Psychologist.

12. 33 (70.2%) respondents believed there was no change in the number of G.P. visits they made for other problems, 11 (23.4%) believed they made fewer visits and 3 (6.4%) believed they made more visits to their G.P. after seeing the Clinical Psychologist.



13. 9 (19.2%) respondents believed there was a significant or slight reduction in their need to use pills or other medication, 19 (40.4%) respondents believed there was no change while 4 (8.5%) respondents believed their use of pills or other medication increased after seeing the Clinical Psychologist. 15 (32%) respondents were not on medication.

14. 26 (55.3%) responded that they would definitely recommend the psychology service to a friend and 16 (34%) maybe while 3 (6.4%) said no and 2 (4.3%) said definitely Questions 15 and 16 asked for additional comments about the Clinical Psychology Service. 21 (44.7%) respondents made no comments. The most frequent comment (7 respondents, 14.9%) concerned the waiting time to see the Clinical Psychologist was too long and two respondents complained of lack of comfort at the clinic. Several respondents welcomed the chance to share their problem with someone who would listen. A small number suggested that the Clinical Psychologist should have been more directional, while a similar number stated that the Clinical Psychologist should have listened more. Other points made included the need for follow-up after discharge, group sessions and inappropriate referrals.

## **Discussion**

The response rate was disappointing but not unusual for a postal survey (Cureton and Newnes, 1995). Moser and Kalton (1971) suggest that between 30 and 40 per cent return is the norm for a postal questionnaire survey. The need to reduce the waiting time to see a Clinical Psychologist following G.P. referral was demonstrated in both this survey and by Sakol and Paul (1995). This is an important and ongoing issue, particularly when someone is experiencing a severe personal crisis. Although the CCPS policy is to see patients within nine weeks of referral closer liaison between the CCPS and G.P.s should be encouraged and the CCPS should consider setting up a special crisis service for emergency referrals. This highlights the need for G.P.s to make an early and accurate identification where psychological intervention is most appropriate, an area in need of further research following

McPherson and Feldman's (1977) study. Appointment times and location were generally considered to be convenient while comfort at the location or clinic is important, though only two people complained about this. While Strathdoon House provides a relatively stigma-free, relaxed, sound-proof model environment other clinics could be improved. The majority of respondents were very satisfied or satisfied with the help they received from the Clinical Psychologist. A few, however, were not satisfied, and their reasons included the waiting time being too long, being told things they did not want to hear, and the Clinical Psychologist just listening. There were no clear patterns to the complaints (apart from waiting times) from which to make recommendations. A follow-up interview with dissatisfied respondents, providing that they agreed (Skaife and Spall, 1995), would have been useful but was not possible in this survey. Most respondents perceived positive changes in their mood, confidence, ability to cope with their referral problem, relationships with other people and general well-being since seeing the Clinical Psychologist. A minority of respondents, however, perceived themselves to have become worse in these areas of personal functioning since seeing the Clinical Psychologist. There are a number of possible reasons for this, and no assumptions can be made from this survey. Over half the respondents made fewer visits to their G.P. in relation to their referral problem after psychological intervention, supporting Sakol and Paul's (1995) findings, providing further evidence for the benefit of the Direct Access Service to G.P.s. Most respondents found no change in the number of visits that they made to their G.P. for other reasons, however, these are likely to be for problems of a more physical nature. Nearly twenty per cent of respondents reduced their use of pills or other medication after seeing the Clinical Psychologist, similar to Sakol and Paul's (1995) finding, and clearly illustrates the importance and benefits of psychological intervention. Finally, over half the respondents would definitely recommend the psychology service to a friend, while a further thirty-four per cent responded maybe. A minority of respondents were obviously



dissatisfied with the service, mainly those who had perceived no positive changes in personal functioning after seeing the Clinical Psychologist. Further research using interview methods as a follow-up to an initial survey would be useful for identifying reasons for dissatisfaction with the service and perceived deterioration in various areas of personal functioning. This would provide more detailed information about patients' grievances and help determine ways of improving the service in an increasingly competitive market.

### **Acknowledgements**

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## **Single Case Research Study 1**

**Marital disharmony in the treatment of panic disorder and agoraphobia:**

**A single case study**

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Short title for running head: Panic disorder, agoraphobia, marital disharmony.

Prepared in accordance with the submission requirements for  
Behaviour and Cognitive Psychotherapy (see Appendix 5).

## **Marital disharmony in the treatment of panic disorder and agoraphobia: A single case study.**

### **Summary**

That panic disorder and agoraphobia often develop following a stressful life event is well documented, in particular interpersonal problems (Last, Barlow & O'Brien, 1984; Kleiner & Marshall, 1987). This paper describes the addition of marital therapy to the more traditional treatment approaches of anxiety management, cognitive therapy and exposure therapy for a 33 years old married woman with panic disorder and agoraphobia. Results showed at discharge that she no longer experienced panic attacks and was able to return to work and travel normally. She also reported considerable improvements in her marriage. It is suggested that using marital therapy when implicated increases the effectiveness of the treatment for this disorder and reduces the chances of relapse. This supports Kleiner & Marshall's (1985) evidence that employing procedures that deal with relationship problems may enhance treatment effectiveness.

### **Introduction**

By far the most common clinical phobia is agoraphobia, a fear of going out into open spaces and public places, travel, leaving home or remaining home alone (Leitenberg, 1976). Most people with panic disorder develop the complication of agoraphobia and that agoraphobic avoidance behaviour is simply one associated feature of severe, unexpected panic attacks (Barlow & Durand, 1995). It is often found that agoraphobia starts after a stressful life event.



For examples the death of a loved one, serious illness, the birth of a loved one, increasing responsibilities and problems with close relatives (Emmelkamp, Bouman & Scholing, 1989). In a study by Last, Barlow, & O'Brien (1984) one third of agoraphobia patients were experiencing interpersonal difficulties before the onset of their difficulties. Kleiner & Marshall (1987) found that 84% of an agoraphobic group were experiencing relative or marital problems for a long period prior to having their first panic attack. Approximately seventy-five percent or more of those who suffer from agoraphobia are women (Marks, 1969; Barlow, 1988). Goldstein & Chambless (1978) proposed that because agoraphobia is found mainly in women it arises in response to interpersonal stress and in dependent people with limited assertiveness. Bland & Hallam (1981) found that females with agoraphobia responded less well to treatment when there were marriage problems. Emmelkamp, Van der Hout & de Vries (1983) found that exposure treatments were more effective for treating avoidance in agoraphobia than assertiveness training. Other conditions often occur with agoraphobia, such as depression, general anxiety, depersonalisation and loss of libido (Buglass, Clark, Henderson, Kreitman & Presley, 1977). This indicates that many types of disturbance and interpersonal difficulties may arise and has implications for therapy for panic disorder and agoraphobia.

This case study describes the successful treatment of a woman with panic disorder with agoraphobia that included anxiety-management, cognitive therapy and exposure therapy and marital therapy. It is argued that using marital therapy made the treatment more effective and reduced the likelihood of relapse.

## Case

KG was referred by her general practitioner for stress induced panic attacks with physical symptoms clearly demarcated, with a request for psychological intervention. The general practitioner had prescribed beta-blockers for KG but she was reluctant to use them. KG presented with spontaneous panic attacks that had occurred occasionally for several years but which had increased in severity and frequency over the previous four months to an average of one a week. KG described a typical panic attack starting with a sudden onset of bodily sensations such as tingling and numbness, dizziness, palpitations, and chest pains. At the same time she experienced intense feelings of apprehension and impending doom. Within a few minutes the bodily sensations had increased to include nausea and shortness of breath. Related thoughts included "I'm going to faint and look silly, I'm going to have a stroke, I'm going mad and crazy," and "I'm going to lose control." These panic attacks usually reached a peak of intensity within a few minutes and lasted between ten and fifteen minutes, followed by several hours of feeling distressed and drained of energy. KG also reported having limited symptom panic attacks in the home. KG usually experienced her panic attacks when shopping, lecturing, driving her car or travelling by bus or train, situations from which she felt she could not escape or obtain help. Since the last panic attack she had a persistent concern about having another panic attack and about the implications of having another attack particularly in a public place. KG found it increasingly difficult to leave her house alone and was on sick leave from work.

Her presentation met the diagnostic criteria for Panic Disorder with Agoraphobia (300.21) as set out in the Fourth Diagnostic and Statistical Manual (American Psychiatric Association, 1994).



KG was thirty-three years of age and employed as a college lecturer, who was on sick leave due to her condition. She had been married for six years and had a daughter of four years, who was born with a benign heart murmur. Her husband's business had recently collapsed leaving the family in financial difficulties, which included the imminent repossession of their house. The husband was having heart problems for which there was a planned quadruple heart bypass operation. The combination of negative, stressful life events had subsequently placed a considerable strain on the marriage, resulting in marital difficulties. KG reported having moderate anxiety and avoidance behaviour for some years but the increased severity and frequency of the panic attacks could be dated to the recent onset of marital problems. KG was very worried and distressed about her condition, in particular about the limitations it was placing on her life. She had some appreciation of the psychological nature of her problems and appeared highly motivated and committed to a psychological treatment approach.

### **Formulation**

KG's self-report information and the Hyperventilation Provocation Test (HPT) suggested that her panic attacks conformed to Clark's (1986) model of panic disorder. A trigger was followed by apprehension and probably over-breathing leading to physical sensations which were catastrophically misinterpreted as evidence of physical illness. This interpretation led to increased anxiety and further sensations producing a vicious circle and a resulting panic attack.

KG remained anxious between panic attacks because of the sudden and intense physical sensations she experienced and ongoing stressful life events including marital distress.



She quickly developed agoraphobic avoidance behaviour to those situations from which it might be difficult to escape or where it would be difficult to get help in an emergency.

Her avoidance behaviour stopped her from learning that the physical sensations she experienced were not dangerous and thus helped maintain her panic disorder.

### **Measures of Assessment**

1. Diaries for panic attacks were given at the first session to record the severity, frequency, and type of bodily sensations experienced during panic attacks (Appendix).

The severity scale was rated from 0 (not at all anxious) to 100 (maximum anxiety). KG was asked to keep a record of her negative beliefs related to her bodily sensations. To determine whether she was successful in challenging her original beliefs, she kept a record of the catastrophic belief, e.g. "I'm going to have a stroke". This was monitored regularly by asking her to rate it on a scale from 0 (I don't believe it at all) to 100 ("I believe it completely"). KG reported having two panic attacks in the two weeks before treatment, which was used as a baseline to monitor her progress. The severity of these attacks was rated as 90 and her belief that these sensations was evidence that she was about to have a stroke was rated at 80 and was used as a baseline (Appendix).

2. A record of daily exposure practice by KG and anxiety level she experienced was used to plan the graded hierarchy and measure her progress (Appendix 1). Expected anxiety levels and actual anxiety levels were rated on a scale between 0 (no anxiety) and 100 (maximum anxiety). The results were not used in the present account.

3. The Fear Questionnaire (Marks and Mathews, 1979) was completed during the initial session and during treatment sessions five and eleven to provide a measure of severity of her phobic behaviour.

4. The Hospital Anxiety and Depression Scale was given at the initial interview session and at treatment sessions five and eleven to monitor her symptoms of anxiety and depression. Her scores for anxiety and depression at the initial session were respectively nineteen and eight.

5. The Hyperventilation Provocation Test (Clark et al., 1985) was carried out during the second session to assess the role of hyperventilation in causing sensations in Mrs G's panic attacks. KG completed one minute of the test and was asked to complete a panic attack sensation checklist to compare similarities between the effects of over-breathing and her panic attacks. She reported four out of seven sensations she normally experienced during a panic attack and rated their severity as 50. These results provided evidence that catastrophic misinterpretation of hyperventilation-induced arousal contributed to some of her attacks.

## **Treatment**

KG was seen on 12 occasions over a 14-week period. After the initial assessment interview, eleven treatment sessions followed with a progress review half way through. The first part of treatment, sessions two to five, KG was presented with a model (Clark, 1986) showing how panic disorder develops and is maintained and treatment followed that described by Clark (1990). The use of the HPT and the resulting bodily sensations provided evidence that physical sensations from voluntary over-breathing was not

consistent with her belief that the sensations were a sign of physical illness. This provided a rationale for teaching controlled breathing (Clark et al., 1985) and for reattribution of sensations to stress-induced hyperventilation rather than to an imminent stroke.

KG was given information about the nature and function of anxiety including a description of the symptoms and their possible evolutionary origins. The cognitive approach to treatment involved explanation of the link between thoughts, emotions, behaviours and bodily sensations in particular (Beck et al., 1979; Rachman et al., 1987) and identifying her catastrophic misinterpretation of the bodily sensations. Then helping her to test the validity of these thoughts using procedures such as Socratic questioning (Beck et al., 1985). Applied Relaxation (Ost, 1987) was taught as a coping skill to reduce both her general level of anxiety and anxiety in the feared situations. It was demonstrated during a session and given as homework to be learnt through regular practice.

To reduce her avoidance behaviour the second part of treatment, sessions six to nine, consisted of exposing her to feared situations in order to show that her worst fears did not occur. Exposure was started only after a considerable reduction in the frequency of her panic attacks in order to prevent additional fear and avoidance. The treatment sessions involved repeated, graded, in vivo exposure to the target phobias as described by Butler (1990), in this case to go shopping alone for long periods of time and travel by public transport. Homework sessions were based on a graded hierarchy with the instruction that they should be attempted daily and that tasks should be repeated until little or no anxiety was experienced before moving up the list.

The third part of treatment, sessions ten and eleven, involved a cognitive-behavioural approach to her marital problems using a single member (KG).



This involved discussion of her marital difficulties and how she could improve communication between her husband and herself and resolve some of their difficulties. Methods included social reinforcement to shape her husband's desirable behaviours and extinguish his undesirable behaviours, negotiating skills and communication training. Trouble shooting, conflict de-escalation, problem-definition and problem solution were also employed using role-play techniques (Schmaling, Fruzzetti & Jacobson, 1989). In the final session a full review of treatment was carried out including a discussion of relapse prevention techniques so that skills acquired during treatment could be applied to new problems in order to prevent future setbacks. KG made gradual and effective progress throughout treatment incorporating and utilising techniques and methods discussed during the treatment sessions.

## **Results**

KG was discharged after twelve sessions after meeting her two main targets. 1. To reduce the number of panic attacks she experienced. 2. To be able to use buses and trains and go shopping alone for several hours alone with little anxiety.

INSERT FIGURES 1 TO 3 HERE (see end of paper).

Figure 1 shows the reduction in frequency of her panic attacks. Figure 2 shows the reduction in severity of her panic attacks. Figure 3 shows how the identified erroneous belief "I'm going to have a stroke" changed over treatments.

**FEAR QUESTIONNAIRE**

	Initial	Treatment	Treatment
Target Phobia	Interview	Session 5	Session 11
Agoraphobia	36	20	0
Visit busy shop alone	8	5	0
Travel alone by bus	8	4	0
Social phobia	2	2	0
Global phobic symptoms	7	5	0

Table 1. Changes in KG's ratings on the Fear Questionnaire across treatment sessions.

The Fear Questionnaire used on three occasions provided evidence of her success in using buses and trains and going shopping alone (see Table 1. above). These results demonstrate that the first part of treatment was effective in reducing her avoidance behaviour.

**HOSPITAL ANXIETY AND DEPRESSION SCALE**

	Initial	Treatment	Treatment
Measure	Interview	Session 5	Session 11
Depression	8	5	0
Anxiety	19	9	2

Table 2. Changes in KG’s ratings on the Hospital Anxiety and Depression Scale across treatment sessions.

A reduction to a score of zero, however, was only achieved following a four-week period of exposure practice, from sessions six to nine. The reduction in her anxiety and depression as measured on the Hospital Anxiety and Depression Scale (see Table 2

above) was most likely due to the development of coping strategies, a decrease in her panic attacks and avoidance behaviour and improvements in her marital relations.

## **Discussion**

The successful treatment of a 33 years old married woman with panic disorder and agoraphobia is described. A combination of anxiety-management, exposure therapy, cognitive therapy and marital therapy brought about a successful resolution of her problems. These methods also provided her with the skills and resources to maintain the progress she had made and prevent relapse. The first part of treatment involving anxiety-management and cognitive therapy brought about a reduction in her avoidance scores. This was likely to be due to a reduction in anticipatory anxiety between panic attacks following reattribution of her catastrophic misinterpretation of hyperventilation-induced arousal. This is similar to a fear of fear in agoraphobia (Goldstein and Chamblees, 1978). The exposure therapy and marital therapy had enabled the treatment targets to be reached and her agoraphobia score reduced to zero. KG reported that she had been able to return to work and was able to walk alone in busy streets with minimal anxiety. The marital therapy had provided KG with skills and techniques to overcome much of the conflict and distress that was playing an important role in the development and maintenance of her panic attacks and subsequent agoraphobic behaviour and so enhanced treatment effectiveness. It was evident from her recent history that increasing numbers of panic attacks and her agoraphobic behaviour was related to her marital difficulties and the growing number of personal and family problems she was experiencing. Feldman, Grodman & Behrman (1983) postulated two possible explanations for women



experiencing greater number of symptoms, including phobic anxiety, following marital distress. One, that men react differently to marital distress than do wives, with wives being more reactive and husbands showing more denial or repression of negative emotion. Alternatively, they suggest that marital harmony may be more central to a woman's psychological health and therefore, marital problems are more stressful for wives than husbands. It is possible that the first explanation applies, at least in this case, since the husband had refused to attend psychological therapy, suggesting denial or repression of his negative emotions, however, further research would be useful.

Unfortunately, long-term follow up was not possible to assess whether she remained symptom free. Future progress was thought to be good because of the considerable improvements she had made and her commitment to the psychological approach. KG had returned to her post as a lecturer and was able to shop and travel alone by car, bus and train. She reported that there had been major improvements in her marital relations, including better communication and sexual relations, and both partners were very committed to maintaining this improvement. KG had shown good understanding of the rationale underlying treatment and had utilised the different treatment procedures. It was believed that she would be able to use these skills in the future to prevent relapse and setbacks.

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**FREQUENCY OF PANIC ATTACKS**

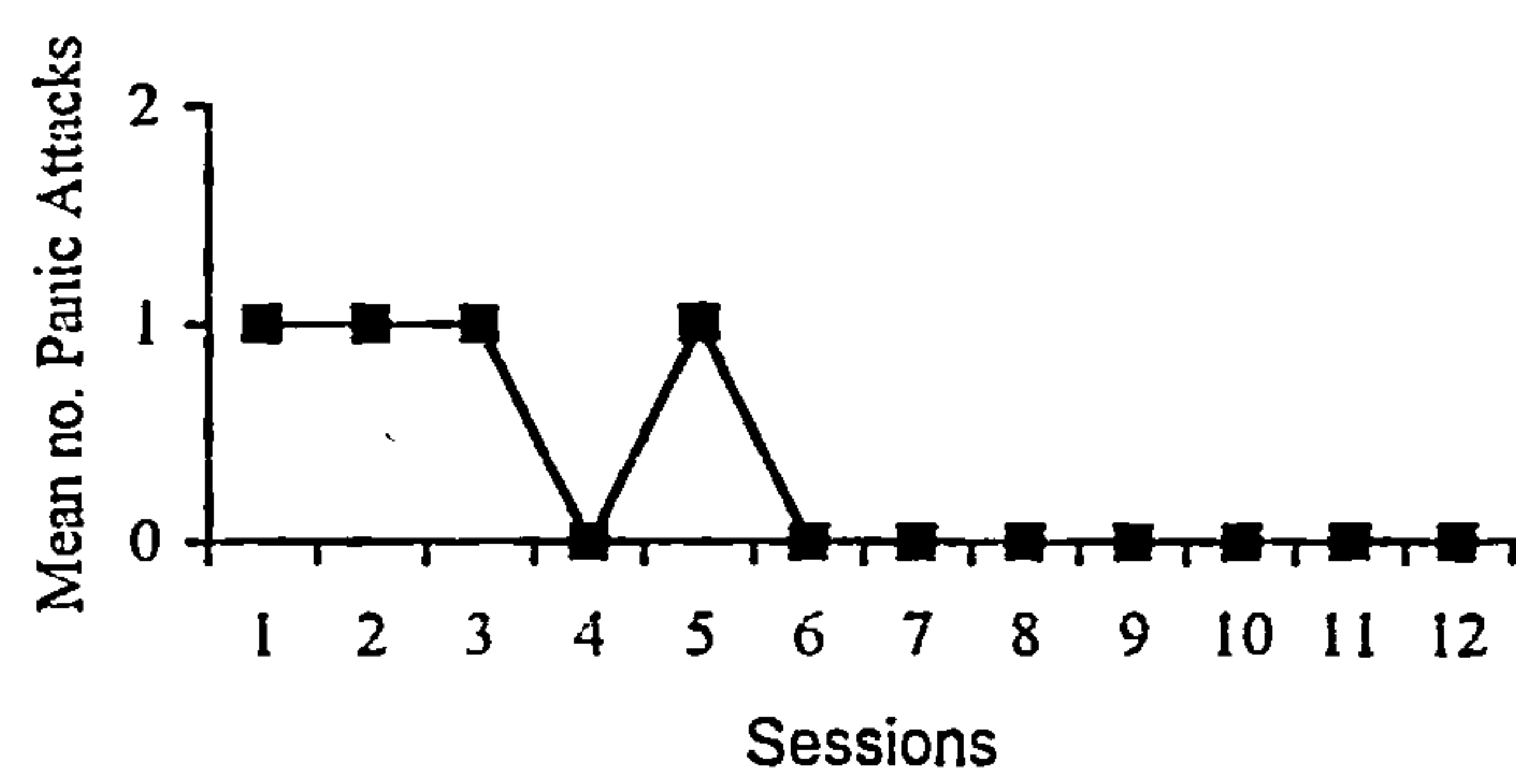


Figure 1. This graph illustrates the reduction in frequency of her panic attacks.

**SEVERITY RATING OF PANIC ATTACKS**

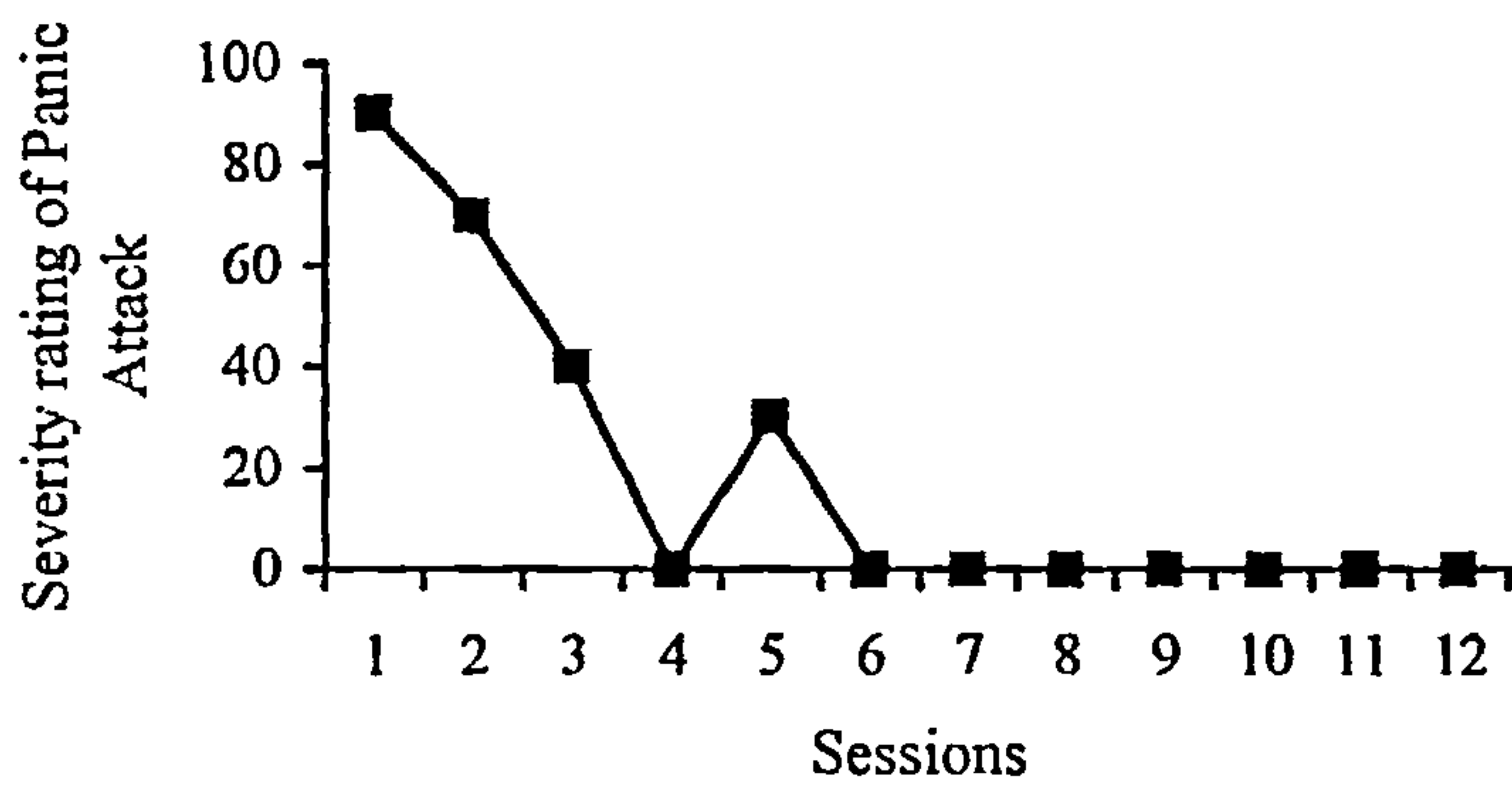


Figure 2. This graph illustrates the reduction in ratings for severity of panic attacks from 0 (minimum) to 100 (maximum).

**BELIEF RATING OF CATASTROPHIC THOUGHT**

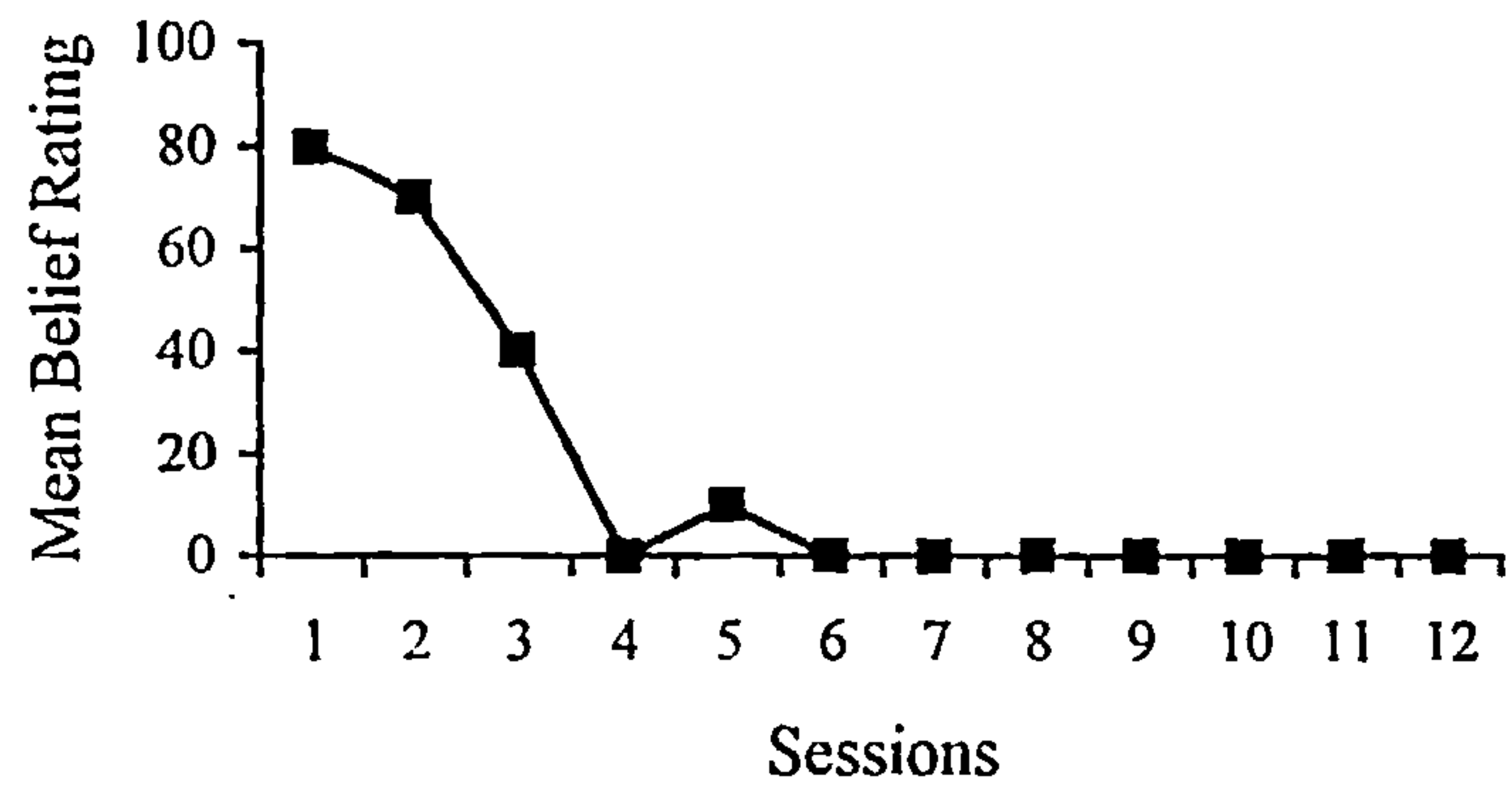


Figure 3. This graph illustrates the reduction in her ratings of the ‘catastrophic thought’ “I’m going to have a stroke” changed across treatment sessions.

## **Single Case Research Study 2**

**Parental non-compliance and the treatment of childhood encopresis:**

**A single case study**

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Short title for running head: Treating childhood primary encopresis.

Prepared in accordance with the submission requirements for  
Behaviour Research and Therapy (see Appendix 6).



## **Summary**

One of the major problems for therapists treating childhood encopresis is parental non-compliance that results in a high treatment failure rate. The present study describes the treatment of a 3 years old boy with primary encopresis whose previous treatment had met with dismal failure. Special attention was directed at the co-operation of the parents in the treatment programme through the therapeutic relationship. Treatment consisted of behavioural management, including scheduling, positive reinforcement and modelling, child management advice, education and information. The treatment targets were achieved after four sessions. The results emphasise the importance of parental co-operation and commitment in treating many childhood problems, including encopresis.

## **Introduction**

Functional encopresis has been defined by Doleys (1979, pp.186) as “the passage of faecal material of any amount or consistency into the clothing or other generally unacceptable areas in the absence of any organic pathology beyond the age of 3 years”. There are many different forms of encopresis or faecal soiling, and it is important to discriminate between the various types because differential treatment may be called for. Yates (1970) maintains that the continuous encopretic suffers from a failure to acquire internal control of the defaecatory act. Anthony (1957) suggested that the continuous encopretic child needs a continuation of basic toilet training to acquire toileting skills since adequate bowel control has never been achieved. The role of fear and toilet avoidance or toilet phobia should also be examined during the assessment process. The child avoids the toilet and sitting on the commode or toilet seat because of aversive procedures that have been used during toilet training, preventing successful conditioning. Ashkenazi (1975), Doleys & Arnold (1975) and Gelber & Meyer (1965) all noted fear of the toilet in several children and found modelling and reinforcement of successive approximations to be effective in removing such problems.

Therapeutic failure due to non-compliance is an important issue in clinical psychology generally. This is particularly true in the treatment of childhood developmental problems such as encopresis and enuresis. Parents will either give up or put undue pressure on their children. Many parents do not fully understand the problem and become frustrated at the failure of other treatment procedures. Parental guilt can arise as a result of using harsh toilet training or after punishing the child (Doleys, 1979).

Several studies have reported that over one third of treatment failures has been due to non-compliance (Taitz, Wales, Urwin & Molnar, 1986; Davis, Mitchell & Marks, 1977; Berg, Forsythe, Holt & Watts, 1983). The lack of parental co-operation and inconsistency in the application of the treatment programme are two of the most common reasons for therapeutic failure (Doleys, 1979). Parents can still become inconsistent in the use of the programme during follow-up (Doleys & Arnold, 1975). The need for parents to act as a co-therapist is often essential for treatment success (Doleys, 1983). He pointed to the necessity and importance of parental co-operation and consistency for the successful treatment of the encopretic child. To manage this successfully parents need to have factual information about the causes of encopresis and the rationale for the treatment procedure.

This study describes the treatment of a three years old boy with primary encopresis in an attempt to demonstrate the importance of parental compliance using a combination of methods in treating the condition.

### **Case Report**

FM was a three years old boy who was referred to a Child and Family Centre for the treatment of encopresis. A physical examination had revealed no abnormalities, and straightforward physical treatment methods, including laxative, regular toileting and charting of progress had been a dismal failure.

FM had never been toilet trained and had been soiling ever since he had been out of nappies at eighteen months. He would show signs of wanting to pass a motion by strained expressions on his face, but would refuse to visit the toilet. Later he would go into another room to pass a motion in his pants and would then return and ask his



mother or father to clean him. His stools were of normal consistency and appearance. Initially, he would soil most days but recently he had started to withhold stools for several days. Some improvement occurred around his third birthday when he used the toilet appropriately, but he soon returned to withholding stools and faecal soiling. Despite using laxative, regular toileting and charting of progress there had been no success and the parents were desperate for a solution.

The family comprised mother and father and two sons, GM who was eight and FM. The family had no previous contact with psychological services or any history of psychiatric problems. Both parents were in their early thirties and their work required shift duties and unsocial hours. This often meant that one or other parent had to look after the children alone. The grandparents, who lived nearby, often helped the family out. The couple described their marital and family relationship as very good although they used different styles of child management. The father was easy going and tolerant while the mother was quite firm and strict. GM, the couple's older son, had never experienced toileting problems despite not having been toilet trained. The parents were comparing FM unfavourably with his older brother at times that caused him some resentment. This was exacerbated by the fact that FM was very different from his older brother, being more active and less compliant. The mother had never been toilet trained herself as a child and had experienced similar problems with soiling to FM at the same age. There were no problems with FM at nursery school and he related well to his peer group.

### **Formulation**

The assessment information suggested that the child's toileting problems conformed to primary encopresis since he had never regularly used the potty or toilet for passing

motions. He had never been toilet trained and consequently had never acquired the skills of bowel control and toileting behaviour. The failure to learn bowel control and appropriate toileting behaviour resulted in stools of normal consistency and appearance being deposited randomly at home. This suggested an interplay of maturation and social learning (Hersov, 1985). Originally, the faecal soiling had been of the non-retentive type but had developed into a retentive type because of withholding his stools. Along with occasional successful toileting at nursery school and at his birthday this suggested an emotional component. This emotional factor was probably related to sibling rivalry, partly as a result of parental comparisons and inconsistency in their behaviour. FM was refusing to use the toilet in a power struggle with his parents (Douglas, 1989). The child was also becoming less sensitive to special stretch signallers in the bowel contributing to prolonged retention. Previous therapeutic failure was almost certainly due to non-compliance (Berg et al. 1983) and not taking account of emotional and parental factors. FM's stools were of normal consistency partly because laxative use had prevented constipation. There was some evidence of toilet phobia developing because of his prolonged avoidance and reluctance to use the toilet, never having been conditioned or having learned to associate passing motions with toilet use.

## Measures

The design was Baseline-Training with hits and misses recorded. Training consisted of sitting the child on the toilet seat at times when elimination was likely (scheduling). This included when FM showed a strained facial expression. Successful elimination was followed immediately by a tangible reinforcer and toileting accidents were ignored, apart from cleaning FM.



The child's parents kept a detailed record from two weeks prior to their first appointment. Diaries were kept throughout treatment to provide an objective feedback of what was happening. They helped to measure the parents commitment and ensured that the parents were complying with the programme (Douglas, 1989).

1. Diary of toileting behaviour to record the frequency of faecal soiling including details of time and place of soiling (see Appendix).
2. Diary of toileting behaviour to record how frequently FM used the toilet appropriately. The parents also kept a record of when they took FM (see Appendix).

## **Treatment**

The specific aims of therapy were (1) To eliminate the faecal soiling behaviour (e.g. decrease unwanted behaviours) and (2) Regular and maintained appropriate toileting behaviour (increase desired behaviours). Other aims included a reduction in FM's anxiety, improve his confidence, and reduce the parent's sense of despair (Wakefield, Woodbridge, Steward & Croke 1984). To improve the parent's compliance with the programme and increase the likelihood of success considerable time was spent providing them with information and reassurance about encopresis. A handout was provided (e.g. Heins & Ritchie, 1988; White, 1984) and information about diet and good nutrition was provided to avoid FM developing constipation and the possibility of an aversive conditioned response.

FM was seen on four occasions over a period of nearly 10 weeks with approximately two to three weeks between appointments. After the initial session which included assessment and an introduction to treatment, three further treatment sessions followed with a progress review at each session. The aetiology was considered multifactorial,



therefore, a programme using various treatment approaches was considered more effective (Hersov, 1985). A learning theory approach was adopted to encourage the development and maintenance of appropriate toileting skills, with no consequences for soiling (Doleys, 1979). Modelling was used because of the relationship between the two siblings and also because of the toilet avoidance behaviour (Doleys & Arnold, 1975).

In addition, parental management techniques were used to address the inconsistent parenting and improve parent-child relationships. Finally, developmental counselling focused on bowel function that was used to enhance knowledge and decrease incorrect perceptions and attributions of the parents.

At the first treatment session following the initial assessment FM's mother was introduced further to the rationale of the treatment package. Using a behavioural management approach, regular toileting was encouraged including the use of social reinforcement (a hug and smile) and a star chart as reinforcement for successive approximations to successful elimination. Initially this was to get FM to sit on the toilet seat, and then to pass a motion. His mother was encouraged to talk to her son about passing his motion in the toilet in order to reduce the child's anxiety.

The parents were encouraged to make the toilet a relaxed, familiar place by means of toys, books and decoration, and for one of the parent's to sit with their son in the toilet. The parents agreed to purchase a child's seat to fit on the conventional toilet. The importance of careful and systematic compliance with the programme and consistent child management by both parents was regularly emphasised.

Unfortunately, the parents were unable to attend appointments together because of the nature of their work. FM's father agreed to attend the second session as requested and this provided the opportunity to compare and contrast the approach of both parents

towards their son. FM was still soiling regularly although he had managed to use the toilet appropriately once to pass a motion for which he was suitably rewarded. Discussion centred around consistent and effective parenting towards both sons, and in order to improve parent-child relationships positive parenting techniques were encouraged (Douglas, 1989). Emphasis was placed upon reducing sibling rivalry between the two brothers and the need for caring, consistent parental control to improve their pro-social behaviour. The parents were encouraged to recognise the different needs and feelings of their children. Finally, the importance of persisting in the systematic application of the behavioural management techniques was underlined. Although there had been some reduction in the appropriate use of the toilet by the third session problems still remained. The use of modelling by the brother was introduced into the programme to improve the relationship between the boys and reduce their rivalry. Participant modelling is often effective in overcoming fears and anxieties in children. Other children that are creditable for the child usually provide the most effective model. There are three main components, the model demonstrates the desired behaviour to the subject, the model uses physical prompts to assist in response replication, and finally the model's assistance is gradually faded out while the subject continues independent practice (Ritter, 1969).

There was a major improvement in FM's toileting behaviour, following the introduction of modelling, at the fourth session. FM's older brother had willingly agreed to act as a model for his brother, initially to demonstrate the desired behaviour, then to assist in response replication and finally to fade out. In addition to being instructive and reassuring, he was also a motivating factor. This had the desired effect since FM had modelled his brother's behaviour successfully and had been clean and continent since the previous session.

FM had also used the toilet for five of the last seven days including the last two visits alone. Further appointments were planned to help maintain the improvements made, but the parents requested a discharge. Techniques to prevent relapse were discussed, including the importance of continuing to use the behavioural management methods acquired, consistent child management and a good, healthy diet for FM.

## **Results**

FM was discharged after four sessions after meeting his targets of (1) elimination of faecal soiling behaviour and (2) regular, consistent and appropriate use of the toilet to pass a motion.

INSERT FIGURES 1 & 2 HERE (see end of paper).

Figure 1 shows the reduction in faecal soiling over the course of treatment. Figure 2 shows the increase in frequency of appropriate toilet use across the treatment period. When discharged FM had been clean for over two weeks and he had used the lavatory appropriately for five days out of the last seven. He had also been able to visit the toilet alone on the last two visits.

## **Discussion**

The successful treatment of this case was due to two main factors. One, the active co-operation and full commitment of both parents in carrying out the programme and secondly the use of a combined treatment approach. It was clear from the assessment interview that both parents were lacking in knowledge and information about the nature of encopresis and the treatment rationale. Partly as a result, they had not been



fully committed to the programme previously used. This had resulted in a lack of success and further frustration and despair for the parents, that had in turn, been reflected upon FM. The importance of providing the parents with information about the nature of encopresis and a clear description of the treatment rationale was necessary to obtain their co-operation and increase the likelihood of treatment success.

The case also demonstrates the need to use a combination of approaches because of the different factors often involved in the development of encopresis (Hersov, 1985). The use of modelling (Bandura, 1977; Ritter, 1969), in particular, achieved something of a breakthrough. Finally, parental advice about child management had helped achieve treatment success. The parents reported a more relaxed family atmosphere that had reduced FM's anxiety. There was an obvious need for a long-term follow-up to be sure that change in faecal soiling and toileting behaviour had been maintained, but this was not possible. Long-term prognosis was considered good because of the improvements that had been made and because of the parents understanding and co-operation with the treatment programme.

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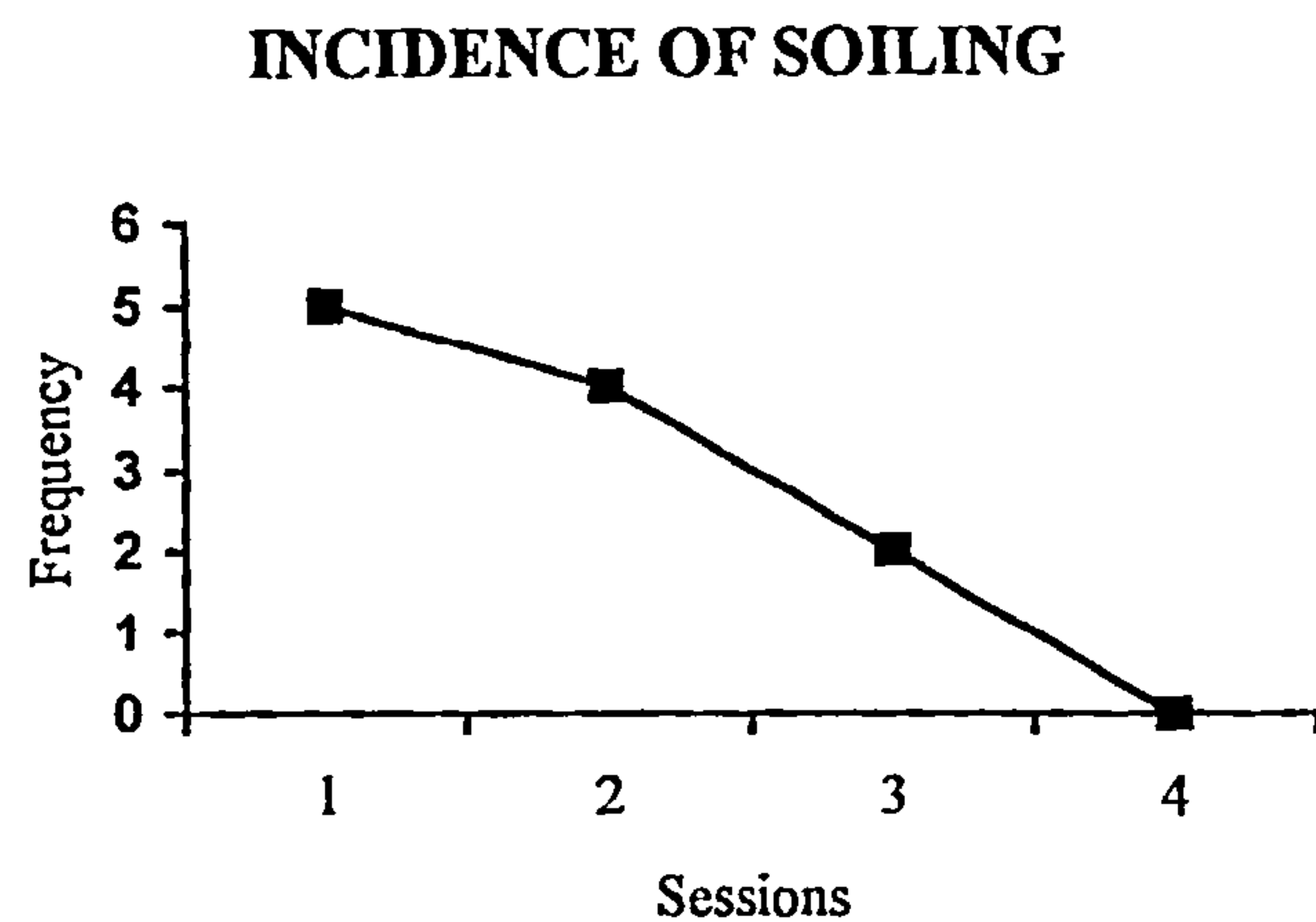


Figure 1. Change in frequency of the incidence of FM’s faecal soiling across treatment sessions.

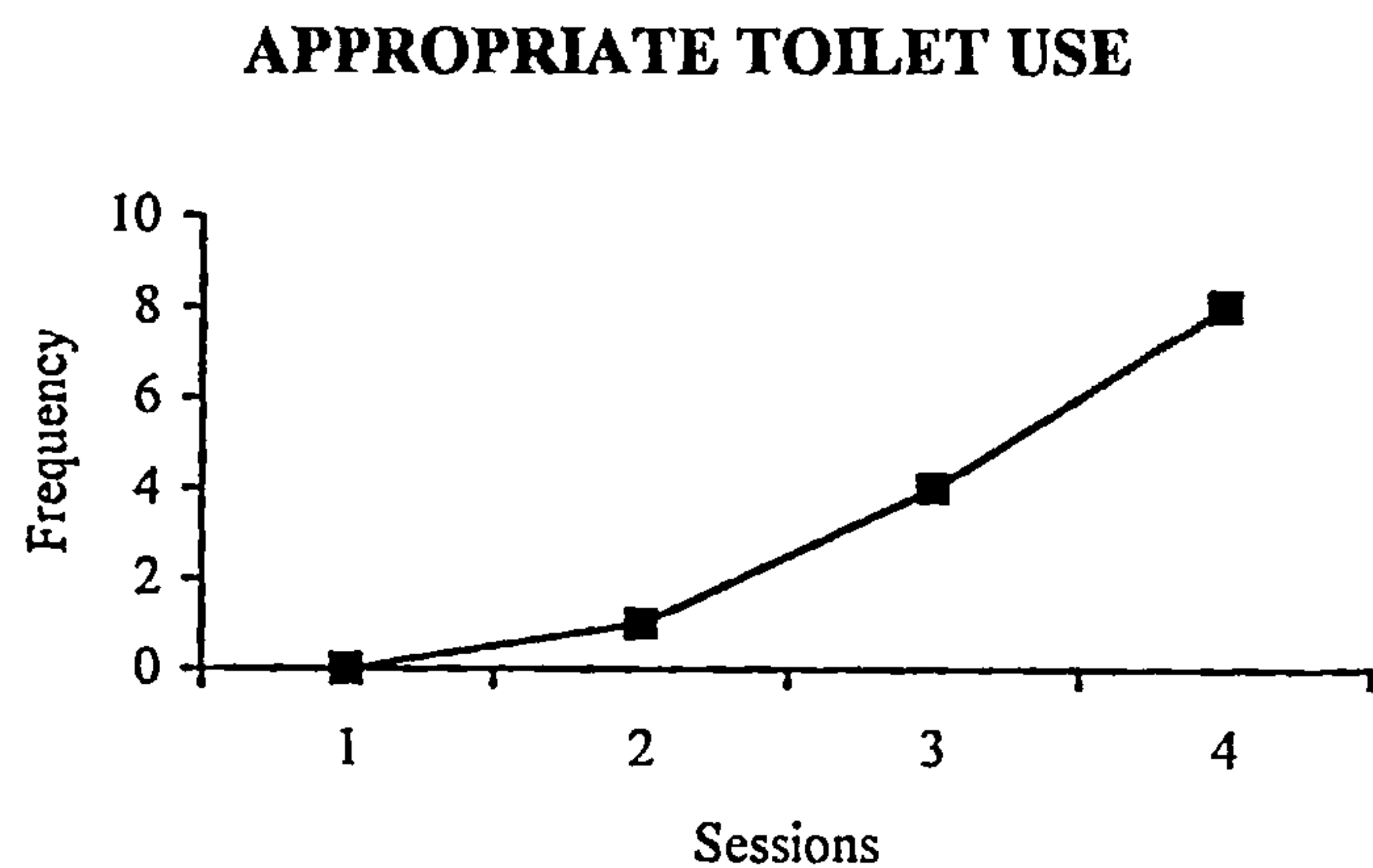


Figure 2. Change in frequency of appropriate toilet use by FM across treatment sessions.

**Single Case Research Study 3.**

**Cognitive therapy for depression not responding to antidepressant medication: A  
single case study**

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Short title for running head: Cognitive therapy for major depression

Prepared in accordance with the submission requirements for  
Behavioural and Cognitive Psychotherapy (see Appendix 7).

## **Summary**

The efficacy of cognitive therapy for a 34 years old woman with a major depressive disorder is described. Her depressive symptoms, including low mood, suicidal thoughts, excessive sleeping and social withdrawal, had not responded to various antidepressant medications she was prescribed during the previous three years. The patient met at least four characteristics identified by Hollon (e.g. Fennell & Teasdale, 1982) as being predictive of a poor treatment response. The use of a cognitive approach (Beck et al. 1979) is described. The patient's ratings on the BDI, HADS, ATQ and DAS had all reduced considerably by therapy termination. There were significant improvements in her affective, behavioural, biological, cognitive, motivational and somatic symptoms. The woman was taking control of her life by making major decisions in her life and acting upon them. These positive changes are discussed in terms of self-efficacy (Bandura, 1977b).



## Introduction

There have been numerous outpatient group studies comparing the efficacy of cognitive therapy with antidepressant medication and combined cognitive therapy and medication for the treatment of depression. Many of these studies have shown that cognitive therapy is either more effective or at least as good as antidepressant medication (Blackburn, Bishop, Glen, Whalley & Christie, 1981; Kovacs, Rush, Beck & Hollon, 1981; Murphy, Simons, Wetzel & Lustman, 1984; Dobson, 1989). There have been encouraging results too, in the effectiveness of cognitive therapy in preventing relapse in depressed patients (Simons, Murphy, Levine & Wetzel, 1986; Blackburn, Eunson & Bishop, 1987).

Blackburn et al. (1981), however, reported that outpatients experiencing chronic depression for many years do not generally respond well to cognitive therapy either alone or with medication. Fennell & Teasdale (1982) found that cognitive therapy with five treatment resistant outpatients produced very modest results. Hollon (in Fennell & Teasdale, 1982) identified seven critical characteristics of depression. These comprised the severity of depression, duration of current episode, poor prior treatment response, more than one episode of depression, the presence of additional psychopathology, overall impairment moderate or severe and poor estimated tolerance for life stress. He suggested that four or more items present were predictive of a poor response to treatment. Blackburn (1989) emphasised the urgent need for more controlled studies using cognitive therapy with treatment-resistant patients. This paper describes the use of cognitive therapy for a woman with a major depressive disorder who met at least four of the conditions formulated by Hollon (see Fennell & Teasdale, 1982).

These included a Beck Depression Inventory (BDI) score greater than 30, duration of current episode greater than 6 months, poor prior response to treatment and overall impairment estimated at least as moderate.

### **Case History**

A psychiatrist referred LI, a 34 years old woman suffering from depression, to the Clinical Psychology Department. For three years both her G.P. and psychiatrist had prescribed her many different antidepressants, but her depressive symptoms had not responded to medication. These medications included Efexor (venlafaxine), Manerix (moclobemide), and Prozac (fluoxetine). She was on Prozac when referred to the Psychology Department. LI presented with moderate to severe levels of depression, including behavioural, biological, motivational, affective, somatic and cognitive symptoms. She described having a very low mood almost every day with diurnal variation, her mood usually being worst in the morning. LI described her appetite as poor but she had not lost weight significantly. She had difficulty falling asleep at night and was sleeping excessively during the day, often not getting up until mid afternoon. LI was avoiding social activities and no longer obtained any enjoyment from interests and activities and she occasionally drank to excess. LI described feeling worthless and guilty and admitted having had suicidal thoughts. She had a negative thinking style, including a hopeless view of herself, life and the future, and was doubtful about the outcome of alternative treatment. Her presentation met the diagnostic criteria for a Major Depressive Episode, single episode, moderately severe (296.22) in the Fourth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, American Psychiatric Association, 1994).

LI worked as a part-time bar person. She had a twin sister, an older sister, and three older brothers. One brother had committed suicide a year before. LI described a very unhappy childhood due to her parents arguing, violence and excessive drinking. Her mother died when she was 17 years old and her father went to live with her mother's sister. She consequently left home to live with a cousin and then moved in with a boyfriend, but this relationship did not last long. LI was 22 years old when she met a foreign student, whom she married two years later. The couple lived abroad where they were initially happy and had a baby son, but problems soon arose. Her husband became increasingly possessive and she alleged that he sexually abused her. She returned to Scotland with her son but her husband followed her and forced her to live with him again. The relationship soon deteriorated and she left him for good. LI formed another relationship but the partner deceived her out of large sums of money. At the time of the referral, she was in another relationship that had started badly when she found him with his previous girlfriend. Although the couple were still together the relationship was experiencing further difficulties. LI had an abortion several weeks before beginning psychological therapy. She had wanted another child but her partner did not want any more children.

### **Measures of Assessment**

1. Weekly Activity Schedules were completed to record and monitor her activity levels with ratings from minimum (0) to maximum (5) for mastery or pleasure and to elicit thoughts associated with specific behaviours (Beck, Rush, Shaw, and Emery, 1979).



2. The Hospital Anxiety and Depression Scale (HADS, Zigmond and Snaith, 1983) was administered to screen for anxiety and depression and was administered at session one, six, and ten.
3. The Beck Depression Inventory (BDI, Beck, Ward, Mendelson, Mock, and Erbaugh, 1961) was administered to measure the level of depression and was administered at session one, six, and ten.
4. Automatic Thoughts Questionnaire (ATQ, Hollon and Kendall, 1980) was administered to measure negative automatic thoughts at session one, six and, ten.
5. Dysfunctional Attitude Scale Form A, (DAS, Weissman & Beck, 1978), was administered to measure dysfunctional attitudes at session 1, 6, 10. The Burns (1980) Dysfunctional Attitude Scale was used to identify particular areas of dysfunctional attitudes.

## **Formulation**

LI's depression was consistent with the cognitive model of depression (e.g. Beck, Rush, Shaw & Emery, 1979). Her depression was the end result of various developmental, psychological and social predisposing and precipitating factors (Brown & Harris, 1978; Fennell, 1989). LI had developed many dysfunctional assumptions because of her early adverse experiences (Beck, 1967, 1976; Brewin, 1990) and stressful life experiences. Critical events during her life, for example, her marriage breakdown and alleged marital abuse, had activated these dysfunctional assumptions producing an increase in her negative automatic thoughts (NATs). These NATs are associated with negative emotions and can be interpretations of a current incident (unfaithful partner), future predictions (end up like her mother) or past memories (unhappy childhood).

The NATS lead on to the various symptoms of depression and increasing levels of depression are associated with more frequent and intense NATs. Her lowered activity level and social withdrawal had resulted in a reduction of social reinforcement, leading to further discouragement and self-criticism (Lewinsohn, Youngren & Grosscup, 1979). Her lack of control of earlier traumas and inability to adjust to loss had led to feelings of helplessness (Seligman, 1975). LI had limited opportunities to develop adaptive and functional relationship and social skills because of poor role models (Bandura, 1977a) and poor self-efficacy expectations (Bandura, 1977b). Since being treated for depression LI had experienced further major negative life events including her brother's suicide and the abortion. Both of these events contributed to maintaining and increasing her depression and feelings of guilt and helplessness. Protective factors for both depression and suicidal intent (Brown & Harris, 1978) included her son, her work and a confiding relationship with her sister.

## **Treatment**

LI was seen on ten occasions over fourteen weeks. Following on from the formulation a cognitive approach was adopted and she was instructed in the use of cognitive therapy of depression (Beck et al., 1979). After the initial interview, nine treatment sessions followed, with a progress review halfway through.

The initial interview session included an assessment of whether she was suitable for cognitive therapy and her current difficulties. This included her symptoms, life problems, negative thoughts, onset, development and context of her depression, and the presence of suicidal thoughts. Three main goals of therapy were identified: (1) Reduce excessive sleeping (2) Increase her working hours (3) Increase her social activities.



LI was given details about the duration and frequency of sessions and the use of homework assignments. She was given *Coping with Depression* (Beck & Greenberg, 1974) and asked to complete the HADS, BDI, DAS and ATQ and record her daily activities on weekly activity charts.

To counteract her excessive sleeping, inactivity and social withdrawal, a behavioural, activity-orientated intervention was used to begin treatment. LI was introduced at the second session to the rationale of activity scheduling, including rating tasks for pleasure and mastery, and graded task assignment. Activity scheduling focused on methods to increase her activity levels and gradually fill each day to the maximum with both mastery and pleasurable activities. Work focused initially on the morning to prevent her going back to bed. LI drew up a sample list of activities that she previously enjoyed (pleasure) or gave her a sense of achievement (mastery). LI was taught to use distraction techniques such as focusing on objects, sensory awareness, mental exercises, pleasant memories and fantasies, and absorbing activities to avoid painful thoughts and feelings. LI was encouraged to assess the advantages and disadvantages of using these techniques. This also helped to identify her negative thoughts such as 'I can't cope'.

The third session started with the agenda and a review of progress using the activity schedules, including any problems encountered. LI was then introduced further to the rationale and methods of cognitive therapy of depression. This included information about the relationship between thoughts, behaviours and emotions and the influence of thinking on behaviour with reference to the handout *Coping with Depression* (Beck & Greenberg, 1974). LI was asked to complete part of the record diary for homework assignment, focusing on the situation, her emotions and thoughts.



The fourth session was spent reviewing progress and discussing the link between her emotions and thoughts from her record diary. Examples from her life were used to explain to her how to complete the diary including evidence for and against NATS, conclusion and outcome. For homework assignment LI rated her emotions (rate 1-100%) and negative automatic thoughts (NATS) and belief in them (1-100%). LI then wrote down evidence both for and against these NATS. Finally she wrote a conclusion and outcome including her belief in NATS (1-100%) and emotions (1-100%) following reappraisal. The fifth, sixth and seventh sessions were spent reviewing her record diary of the previous weeks and discussing these examples during the session. LI was introduced to ways of answering her negative thoughts. She was encouraged to evaluate the evidence for her NAT, to generate alternative interpretations of situations, to examine the type of thinking error that she was making and to appraise the advantages and disadvantages of thinking in such a way. LI had identified many situations when she had experienced NATS that she had been able to challenge and reappraise with increasing success. These included arguments with her partner, thoughts about her abortion and about her brother committing suicide and that she was a bad mother. The rationale of behavioural tasks was clearly explained to LI and role-play during sessions and behavioural experiments for homework assignments were utilised. As therapy progressed and her symptoms reduced the focus of therapy shifted to changing her faulty assumptions (Beck et al. 1979). LI expressed many dysfunctional assumptions mainly in the areas of autonomy, love and achievement (e.g. DAS, Burns, 1980). LI adopted an inferior role in relationships, believed that happiness and self-esteem came from outside, and that self-worth and joy were dependent on her productivity (Burns, 1980).

Sessions eight, nine and ten were spent dealing with these dysfunctional assumptions, including discussing cognitive errors such as over-generalising and selective abstraction. Intervention included exposure of faulty logic and arbitrariness of assumptions, listing advantages versus disadvantages of dysfunctional assumptions, reattribution technique (e.g. feeling responsible for her brother's suicide) and self-questioning. Behavioural assignments between sessions were especially important because they enabled LI to test out for herself many of her erroneous beliefs. The final session also included rehearsal of cognitive and behavioural strategies to prevent possible relapse.

### **Treatment Results**

The reduction in LI's scores on the different rating scales over the fourteen week treatment period are shown in Figures 1 & 2.

INSERT FIGURES 1 & 2 HERE (see end of paper)

The Beck Depression Inventory showed a decrease from 43 (severe) to 28 (moderate) to 17 (mild depression) by the last session. This indicated a significant reduction in the level of her depression. The HADS depression scale decreased from 18 to 13 to 9 in line with the reduction on the BDI, and the anxiety scale reduced from 7 to 4 to 3. The ATQ scores reduced from 118 to 75 to 51 at the tenth session. The DAS scores reduced from 153 to 139 to 127 at the tenth session.

Self-report indicated major improvements in her mood, sleep, activity level and motivation. She was working full-time and was in the process of making other major changes in her life. LI described her concentration and thinking generally as much better.

## **Discussion**

This case study describes the successful application of cognitive therapy with a 34 years old woman whose depressive symptoms had not responded to anti-depressant medication over a three years period. She also met at least four of the characteristics formulated by Hollon (see Fennell & Teasdale, 1982) as being predictive of a poor treatment response.

Cognitive therapy had significantly reduced the level of her depression, negative automatic thoughts and dysfunctional assumptions. Reductions in her ATQ DAS scores indicated that her NATs were less frequent and intense and that her basic attitudes, beliefs and underlying assumptions were more functional. Simons et al. (1986) found that high DAS scores and poor social adjustment to be the best predictors of relapse in depression, suggesting that relapse was less likely.

Activity scheduling increased her activity level and feelings of achievement and pleasure, thereby increasing her self-esteem and intrinsic motivation. By changing her behaviour directly, changes may have been brought about in her beliefs and expectations of self-efficacy (Bandura, 1977b). Later in therapy she was beginning to make major decisions and take control of her life, thereby reducing her feelings of helplessness. This may have produced changes in her self-efficacy (Bandura, 1977b) because specific self-perceptions were induced and strengthened.



Although LI's depression had not responded to antidepressants alone, it is possible that her medication made her more amenable to cognitive therapy. Combined with cognitive therapy, medication may have also reduced the risk of suicide and her dropping out of therapy (Johansson & Ost, 1986). The patient was still mildly depressed and she continued to attend therapy. The question of her coming off antidepressant medication was left until there was evidence that the positive changes had been maintained.

Cognitive therapy is firmly established as a mainstream psychological treatment for depression. However, Blackburn (1989) rightly points out there is an urgent need for more controlled studies in the use of cognitive therapy with treatment-resistant patients. It is not possible to define which part of treatment in this study had a significant effect upon her depression. However, improvements had already occurred by the sixth session. One possible explanation is that the early introduction of activity scheduling initially started changing her self-efficacy, since actual performance has a particularly strong influence on efficacy judgements (Bandura, 1977b). Her self-efficacy then increased throughout therapy. Bandura (1977b) maintains that changing behaviour directly changes various cognitive parameters, including beliefs and expectations of self-efficacy. Self-efficacy is related to both self-esteem and self-motivation (Bandura, 1977b) both low in this patient. Self-reinforcement is learnt in various ways and several mechanisms exist for dissociating negative self-reactions and self-blame (as the patient experienced) from self-perception of inferior performance not matching internal standards (Brewin, 1988). Investigation of self-efficacy as a possible mechanism of change with depressed patients who are difficult to treat is recommended using comparative control groups to isolate its specific contribution.

In conclusion, this study reports the successful use of cognitive therapy for a woman with a major depressive disorder, whose symptoms were not responding to antidepressants. Not only were there significant reductions in her depressive symptoms both from objective measurement and from self-report. The patient was also making major changes indicating that they were now able to take control and responsibility of their life and future.

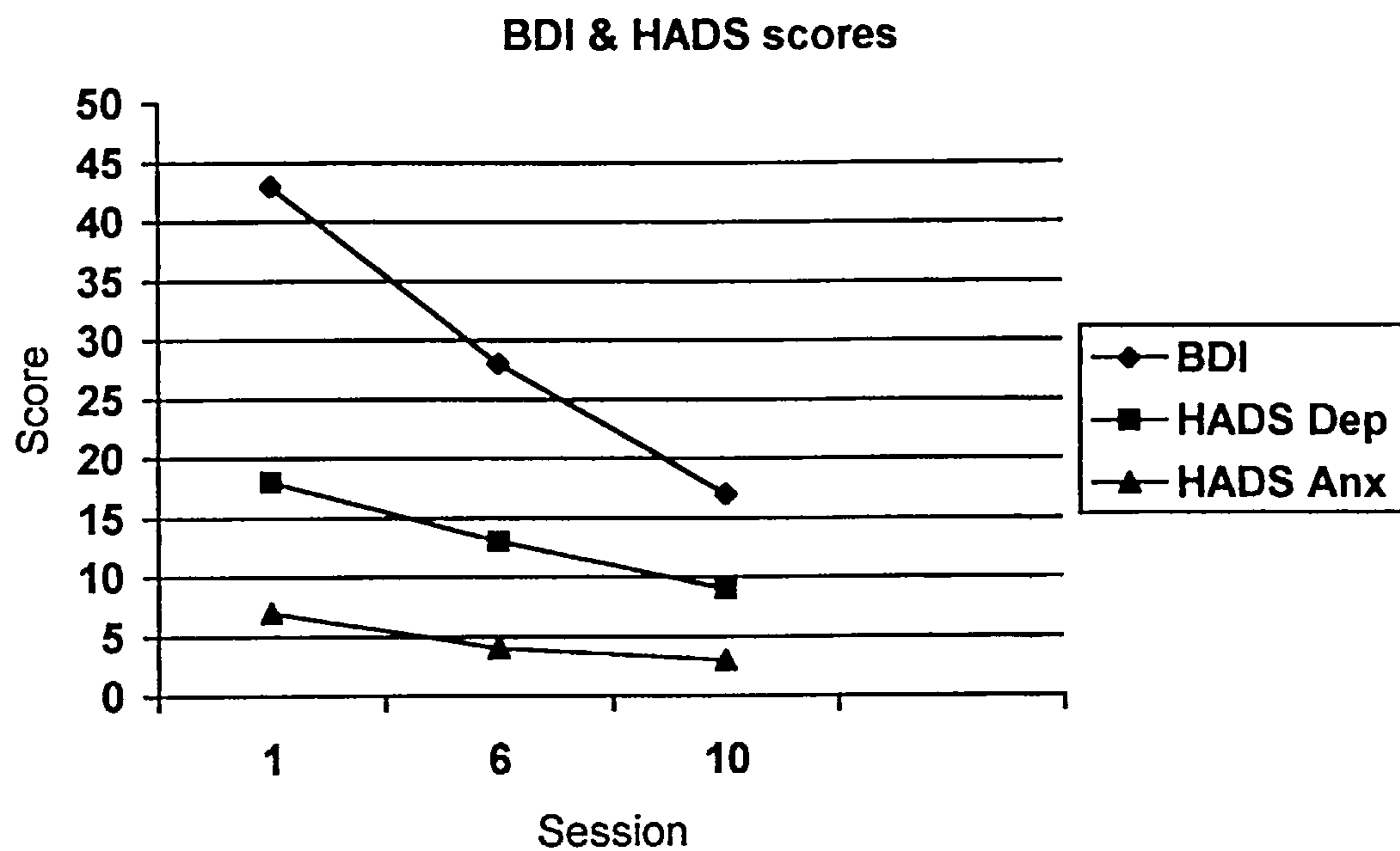
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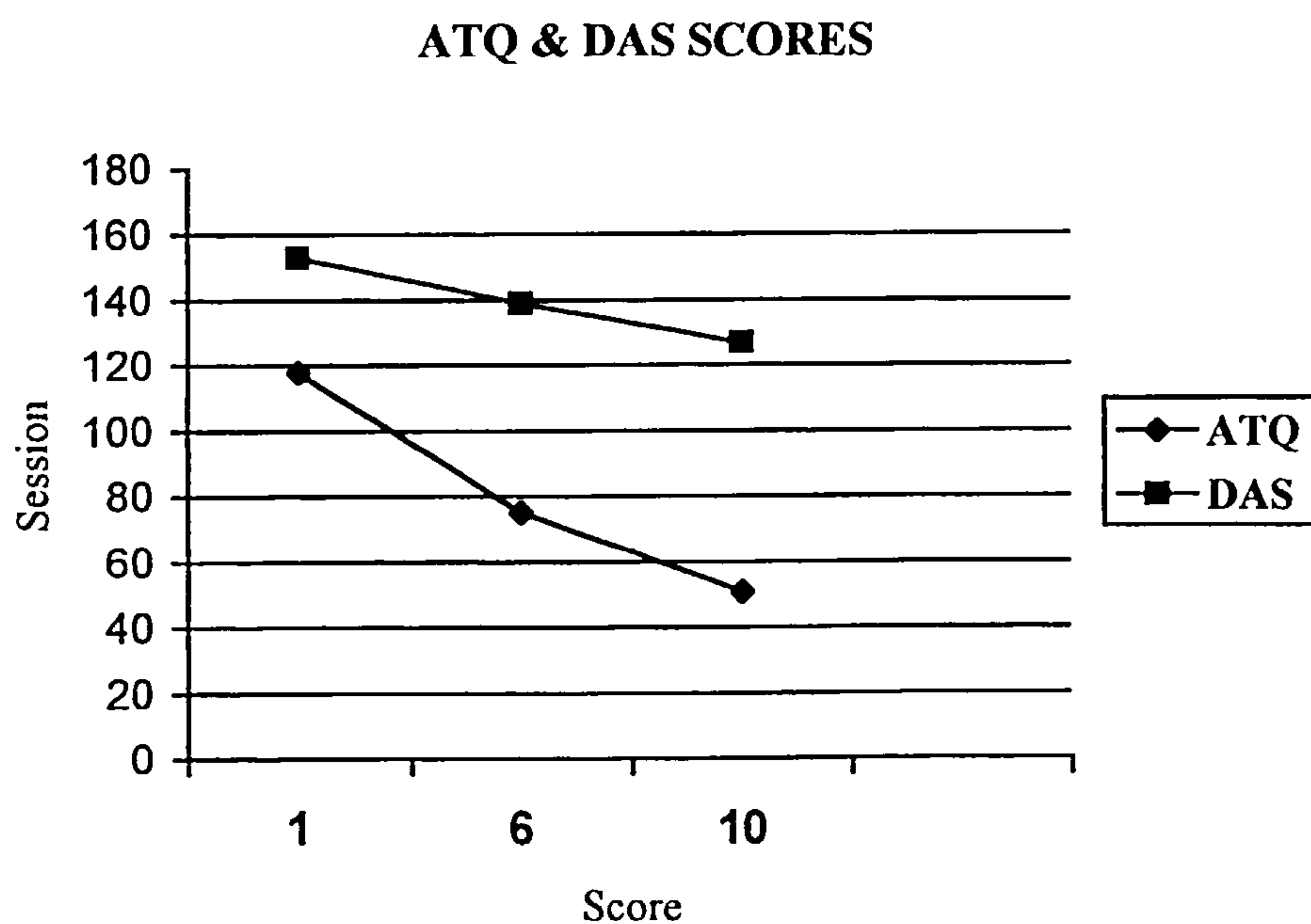


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**Figure 1.** Illustrates changes in LI's ratings on the BDI and ATQ across the course of treatment.



**Figure 2.** Illustrates changes in LI's ratings on the ATQ and DAS across the course of treatment at session one, six and ten.



**Appendix 1. A review of recent research in specific arithmetic and reading disabilities.**

Author notes for the Journal of Child Psychology and Psychiatry

1. This Journal aims to enhance theory, research and clinical practice in child and adolescent psychology and psychiatry and the allied disciplines through the publication of papers concerned with child and adolescent development, especially developmental psychopathology and the developmental disorders. An important function of the Journal is to bring together empirical research, clinical studies and reviews of high quality, arising from different points of view. Contributions from any discipline that further knowledge of the mental life and behaviour of children are welcomed. Papers are published in English, but submissions are welcomed from any country. Contributions should be of a standard which merits presentation before an international readership.
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These should make an original contribution to empirical knowledge, to the theoretical understanding of the subject, or to the development of clinical research practice.
  - (b) *Review articles.*  
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  - (c) *Case studies.*  
These will cover important or novel clinical issues, including innovations in assessment, treatment or methodology.
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Jacob, G. (1983b). Disorders of communication. *Journal of Clinical Studies*, 20, 60-65.

Thompson, A. (1981). *Early experience: the new evidence*. Oxford: Pergamon Press.

Jones, C. C. & Brown, A. (1981). Disorders of perception. In K. Thompson (Ed.), *Problems in early childhood* (pp. 23-84). Oxford: Pergamon Press.

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**Appendix 2. The Research Proposal: Psychosocial problems in children with arithmetic and reading difficulties.**

Amendments to the research proposal.

It had originally been planned to use the Child Behaviour Checklist (CBCL, Achenbach, 1991) and the Personality Inventory for Children (PIC, Wirt, Lachar, Klinedinst & Seat, 1990) in the study. They had both been used by Rourke and his colleagues (Rourke, 1993) and a Hebrew version of the CBCL (Auerbach & Lerner, 1991) had been used by Shalev, Auerbach & Gross-Tsur, (1995) in their study. This would have enabled more direct comparisons to be made between the various studies. However, because of the sensitive nature of the research and to obtain ethical approval from the Local Education Authority and the Head of the Educational Psychology Services it was agreed that the Rutter Scales (Rutter, Tizard & Whitmore, 1970) would be acceptable as an alternative. Both the Rutter Scale A (for parents) and the Rutter Scale B (for teachers) were used but because of the very poor return rate from the parents the data for the A scale has not been included in the research paper.

It was planned to use the WISC-III U.K. (Wechsler, 1992) but this latest version was unavailable and the WISC-R U.K. (Wechsler, 1974) was used as an alternative.

## References:

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Wirt, R.D., Lachar, D., Klinedinst, J.K. & Seat, P.D. (1990). *Multidimensional description of Child Personality: A Manual for the Personality Inventory for Children. 1990 Edition.* Los Angeles: Western Psychological Corporation.



**Appendix 3. Major Research Project Paper: Children with specific learning  
Difficulties in mathematics and reading: Behavioural, emotional  
and social problems.**

Author notes for the Journal of Child Psychology and Psychiatry

The Rutter Scale B Form

Kruskal-Wallis 1-Way Anova (examples)

Mann-Whitney U – Wilcoxon Rank Sum W Test (examples)

Correlation Coefficients (examples)

Multiple Regression (examples)

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Jacob, G. (1983a). Development of coordination in children. *Developmental Studies*, 6, 219-230.

Jacob, G. (1983b). Disorders of communication. *Journal of Clinical Studies*, 20, 60-65.

Thompson, A. (1981). *Early experience: the new evidence*. Oxford: Pergamon Press.

Jones, C. C. & Brown, A. (1981). Disorders of perception. In K. Thompson (Ed.), *Problems in early childhood* (pp. 23-84). Oxford: Pergamon Press.

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# A CHILDREN'S BEHAVIOUR QUESTIONNAIRE

## APPENDIX CHILD SCALE B

TO BE COMPLETED BY TEACHERS

Below are a series of descriptions of behaviour often shown by children. After each statement are three columns: "Doesn't Apply", "Applies Somewhat", and "Certainly Applies". If the child definitely shows the behaviour described by the statement place a cross in the box under "Certainly Applies". If the child shows the behaviour described by the statement but to a lesser degree or less often place a cross in the box under "Applies Somewhat". If, as far as you are aware, the child does not show the behaviour place a cross in the box under "Doesn't Apply".

1. Please put ONE cross against EACH statement. Thank you.

Statement	Doesn't Apply	Applies Somewhat	Certainly Applies	FOR OFFICE USE ONLY
1. Very restless. Often running about or jumping up and down. Hardly ever still	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Truants from school .. .. .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Squirmy, fidgety child .. .. .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Often destroys own or others' belongings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Frequently fights with other children ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Not much liked by other children ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Often worried, worries about many things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Tends to do things on his own—rather solitary .. .. .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Irritable. Is quick to "fly off the handle"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Often appears miserable, unhappy, tearful or distressed .. .. .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Has twitches, mannerisms or tics of the face or body .. .. .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Frequently sucks thumb or finger ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Frequently bites nails or fingers ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Tends to be absent from school for trivial reasons .. .. .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Is often disobedient .. .. .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Has poor concentration or short attention span .. .. .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Tends to be fearful or afraid of new things or new situations .. .. .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Fussy or over-particular child .. ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Often tells lies .. .. .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Has stolen things on one or more occasions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Has wet or soiled self at school this year..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Often complains of pains or aches ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Has had tears on arrival at school or has refused to come into the building this year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Has a stutter or stammer .. ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Has other speech difficulty .. ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Bullies other children .. .. .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there any other problems of behaviour?				
.....				
.....				
Signature: Mr/Mrs/Miss.....				<input type="checkbox"/>
How well do you know this child? Very well <input type="checkbox"/>				
Moderately well <input type="checkbox"/> Not very well <input type="checkbox"/>				<input type="checkbox"/>
THANK YOU VERY MUCH FOR YOUR HELP				

- - - - - Kruskal-Wallis 1-Way Anova

NOSS Num Oper SS  
by GROUP Subject's Group

Mean Rank	Cases		
29.10	5	GROUP = 0	no specific learning
21.30	15	GROUP = 1	specific reading dif
11.69	13	GROUP = 2	maths and reading di
6.50	2	GROUP = 3	specific maths diffi
--			
	35	Total	

			Corrected for ties		
Chi-Square	D.F.	Significance	Chi-Square	D.F.	Significance
14.8679	3	.0019	14.9264	3	.0019

- - - - - Kruskal-Wallis 1-Way Anova

RCS Read Comp standard score  
by GROUP Subject's Group

Mean Rank	Cases		
30.30	5	GROUP = 0	no specific learning
16.77	15	GROUP = 1	specific reading dif
12.58	13	GROUP = 2	maths and reading di
31.75	2	GROUP = 3	specific maths diffi
--			
	35	Total	

			Corrected for ties		
Chi-Square	D.F.	Significance	Chi-Square	D.F.	Significance
14.6640	3	.0021	14.6990	3	.0021

NOSS            Num Oper SS  
by GROUP       Subject's Group

Mean Rank       Cases

18.27            15 GROUP = 1 specific reading dif  
10.15            13 GROUP = 2 maths and reading di  
--  
28 Total

		Exact	Corrected for ties	
U	W	2-Tailed P	Z	2-Tailed P
41.0	132.0	.0083	-2.6088	.0091

BRSS            Basic Reading Standard Score  
by GROUP       Subject's Group

Mean Rank       Cases

7.00            13 GROUP = 2 maths and reading di  
14.50            2 GROUP = 3 specific maths diffi  
--  
15 Total

		Exact	Corrected for ties	
U	W	2-Tailed P	Z	2-Tailed P
.0	29.0	.0190	-2.2119	.0270

RCS            Read Comp standard score  
by GROUP       Subject's Group

Mean Rank       Cases

7.00            13 GROUP = 2 maths and reading di  
14.50            2 GROUP = 3 specific maths diffi  
--  
15 Total

		Exact	Corrected for ties	
U	W	2-Tailed P	Z	2-Tailed P
.0	29.0	.0190	-2.2179	.0266

- - - - - Mann-Whitney U - Wilcoxon Rank Sum W Test

MRS            Maths Reason SS  
by GROUP       Subject's Group

Mean Rank       Cases

17.47            15 GROUP = 1 specific reading dif  
11.08            13 GROUP = 2 maths and reading di  
--  
28 Total

		Exact	Corrected for ties	
U	W	2-Tailed P	Z	2-Tailed P
53.0	144.0	.0413	-2.0547	.0399



- - Correlation Coefficients - -

	TFT	TNSC	TASS	HYFAC	NOSS
TFT	1.0000 ( 35) P= .	.6789 ( 35) P= .000	.8401 ( 35) P= .000	.7939 ( 35) P= .000	-.3549 ( 35) P= .036
TNSC	.6789 ( 35) P= .000	1.0000 ( 35) P= .	.4294 ( 35) P= .010	.3361 ( 35) P= .048	-.1896 ( 35) P= .275
TASS	.8401 ( 35) P= .000	.4294 ( 35) P= .010	1.0000 ( 35) P= .	.7028 ( 35) P= .000	-.5197 ( 35) P= .001
HYFAC	.7939 ( 35) P= .000	.3361 ( 35) P= .048	.7028 ( 35) P= .000	1.0000 ( 35) P= .	-.3896 ( 35) P= .021
NOSS	-.3549 ( 35) P= .036	-.1896 ( 35) P= .275	-.5197 ( 35) P= .001	-.3896 ( 35) P= .021	1.0000 ( 35) P= .

- - - - - Kruskal-Wallis 1-Way Anova

BRSS            Basic Reading Standard Score  
by GROUP       Subject's Group

Mean Rank	Cases
29.80	5    GROUP = 0    no specific learning
16.40	15   GROUP = 1    specific reading dif
13.12	13   GROUP = 2    maths and reading di
32.25	2    GROUP = 3    specific maths diffi

--

35    Total

Chi-Square	D.F.	Significance	Chi-Square	D.F.	Significance
13.8181	3	.0032	13.8686	3	.0031

Corrected for ties

- - - - - Kruskal-Wallis 1-Way Anova

MRS            Maths Reason SS  
by GROUP       Subject's Group

Mean Rank	Cases
24.20	5    GROUP = 0    no specific learning
21.03	15   GROUP = 1    specific reading dif
12.92	13   GROUP = 2    maths and reading di
12.75	2    GROUP = 3    specific maths diffi

--

35    Total

Chi-Square	D.F.	Significance	Chi-Square	D.F.	Significance
6.8611	3	.0765	6.8862	3	.0756

Corrected for ties

\* \* \* \* M U L T I P L E R E G R E S S I O N \* \* \* \*

Listwise Deletion of Missing Data

Equation Number 1      Dependent Variable..    TASS

Block Number 1.    Method:    Stepwise      Criteria    PIN    .0500    POUT    .1000  
                      SEX            VIQ            PIQ            NOSS            SPS            MRS

Variable(s) Entered on Step Number  
      1..      NOSS            Num Oper SS

Multiple R                    .51974  
 R Square                     .27013  
 Adjusted R Square          .24802  
 Standard Error              3.37262

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	138.92531	138.92531
Residual	33	375.36040	11.37456

F =            12.21369            Signif F =    .0014

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
NOSS	-.183417	.052483	-.519743	-3.495	.0014
(Constant)	19.712345	4.491359		4.389	.0001

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
SEX	-.119002	-.126727	.827709	-.723	.4751
VIQ	.098939	.087416	.569760	.496	.6230
PIQ	.205322	.225246	.878391	1.308	.2003
SPS	-.120345	-.125494	.793657	-.716	.4795
MRS	-.088829	-.073570	.500649	-.417	.6792

End Block Number    1    PIN =            .050 Limits reached.

\* \* \* \* M U L T I P L E R E G R E S S I O N \* \* \* \*

Listwise Deletion of Missing Data

Equation Number 1      Dependent Variable..    HYFAC    Hyperactivity Factor

Block Number 1.    Method:    Stepwise      Criteria    PIN    .0500    POUT    .1000  
                      SEX            PIQ            VIQ            NOSS        SPS            MRS            RCS

Variable(s) Entered on Step Number  
           1..        NOSS            Num Oper SS

Multiple R                    .38960  
 R Square                     .15179  
 Adjusted R Square          .12609  
 Standard Error              2.10366

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	26.13404	26.13404
Residual	33	146.03739	4.42538

F =            5.90550            Signif F =    .0207

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
NOSS	-.079552	.032736	-.389603	-2.430	.0207
(Constant)	10.124275	2.801467		3.614	.0010

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
SEX	-.109224	-.107896	.827709	-.614	.5436
PIQ	.031804	.032365	.878391	.183	.8558
VIQ	.157965	.129466	.569760	.739	.4655
SPS	-.257704	-.249279	.793657	-1.456	.1551
MRS	-.088801	-.068223	.500649	-.387	.7014
RCS	-.178928	-.177126	.831215	-1.018	.3163

End Block Number    1    PIN =        .050 Limits reached.



**Appendix 4. Small Scale Service Evaluation Study: Patient survey of a direct access adult clinical psychology service.**

Author notes for the Division of Clinical Psychology Forum.

Patient Questionnaire

Table 1b. Sample Size to Estimate P to Within d Absolute Percentage Points with 95% Confidence.

Description of how table 1b was used.

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News of Branches and Special Groups is especially welcome.

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# Patient Questionnaire

Sex: .....

GP: .....

Age: .....

Please read the following questionnaire carefully and tick your answer:

1.	How many times did you see the Clinical Psychologist before you were discharged ?	1	2-6	7-10	More than 10	
2.	Was the waiting time to see the Clinical Psychologist:	Very Satisfactory	Satisfactory	Not Satisfactory		
3.	Were the appointment times to see the Clinical Psychologist:	Very Convenient	Convenient	Not Convenient		
4.	Was the location you were seen at by the Clinical Psychologist:	Very Convenient	Convenient	Not Convenient		
5.	How satisfied are you with the help you received from the Clinical Psychologist?	Very Satisfied	Satisfied	Not Satisfied		
6.	Have you experienced a change in your mood since seeing the Clinical Psychologist?	Much better	Slightly better	No change	Slightly worse	Much worse
7.	Have you experienced a change in your confidence since seeing the Clinical Psychologist?	Much better	Slightly better	No change	Slightly worse	Much worse
8.	Has your ability to cope with the problem you were referred for, changed since seeing the Clinical Psychologist?	Much better	Slightly better	No change	Slightly worse	Much worse
9.	Have you experienced a change in your relationships with other people since seeing a Clinical Psychologist?	Much better	Slightly better	No change	Slightly worse	Much worse
10.	How is your general well-being since seeing the Clinical Psychologist?	Much better	Slightly better	No change	Slightly worse	Much worse
11.	Did seeing the Clinical Psychologist help reduce the number of visits to your GP in relation to the problem you went to the Psychologist with?	More visits	No change	Less visits		
12.	Did seeing the Clinical Psychologist help reduce the number of visits to your GP for other reasons?	More visits	No change	Less visits		

P.T.O



13.	Did seeing the Clinical Psychologist help reduce the need to use pills or other medication?	Significant reduction	Slight reduction	No change	Increase	Did not use medication
14.	Would you recommend this psychology service to a friend?	Definitely	Maybe	No	Definitely not	
15.	Have you any additional comments which you would like to make about your contact with the Clinical Psychology Service? ..... ..... ..... ..... .....					
16.	Are there any specific suggestions or ideas for improving the service which you would like to make? ..... ..... ..... ..... .....					

Table 1b: Sample Size to Estimate P to Within d Absolute Percentage Points  
with 95% Confidence

Anticipated Population Proportion (P)

d	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95
0.01	1825	3457	4898	6147	7203	8067	8740	9220	9508	9604	9508	9220	8740	8067	7203	6147	4898	3457	1825
0.02	456	864	1225	1537	1801	2017	2185	2305	2377	2401	2377	2305	2185	2017	1801	1537	1225	864	456
0.03	203	384	544	683	800	896	971	1024	1056	1067	1056	1024	971	896	800	683	544	384	203
0.04	114	216	306	384	450	504	546	576	594	600	594	576	546	504	450	384	306	216	114
0.05	73	138	196	246	288	323	350	369	380	384	380	369	350	323	288	246	196	138	73
0.06	51	96	136	171	200	224	243	256	264	267	264	256	243	224	200	171	136	96	51
0.07	37	71	100	125	147	165	178	188	194	196	194	188	178	165	147	125	100	71	37
0.08	29	54	77	96	113	126	137	144	149	150	149	144	137	126	113	96	77	54	29
0.09	23	43	60	76	89	100	108	114	117	119	117	114	108	100	89	76	60	43	23
0.10	18	35	49	61	72	81	87	92	95	96	95	92	87	81	72	61	49	35	18
0.11	15	29	40	51	60	67	72	76	79	79	79	76	72	67	60	51	40	29	15
0.12	13	24	34	43	50	56	61	64	66	67	66	64	61	56	50	43	34	24	13
0.13	11	20	29	36	43	48	52	55	56	57	56	55	52	48	43	36	29	20	11
0.14	9	18	25	31	37	41	45	47	49	49	49	47	45	41	37	31	25	18	9
0.15	8	15	22	27	32	36	39	41	42	43	42	41	39	36	32	27	22	15	8
0.20	5	9	12	15	18	20	22	23	24	24	24	23	22	20	18	15	12	9	5
0.25		6	8	10	12	13	14	15	15	15	15	15	14	13	12	10	8	6	

\* Sample size less than 5

1. The table on the previous page is taken from from a book titled *ADEQUACY OF SAMPLE SIZE IN HEALTH STUDIES* (personal communication Audrey Paul).

2. It is assumed that on a five point scale (as many of the questions are) that they can be grouped into satisfied versus not satisfied and the main question can be split this way. 'P' is the true but unknown proportion in the population and therefore, by choosing 0.5 (similar to default value) for P in the formula for sample size it will always provide enough observations (to make generalisations).

3. The 'd' value of 0.08 is the precision rate. In this case deviation is allowed either side of 50 - from 42 to 58.

4. Lining up row 0.08 with column 0.5 gives the population sample of 150.

5. This was then split proportionately to represent the common split between males and females in Ayrshire and Arran.



**Appendix 5. Single Case Research Study 1. Marital disharmony in the  
treatment of panic disorder and agoraphobia.**

Author notes for Behavioural and Cognitive Psychotherapy

Panic Attack Diary and Exposure Practice Record

## Author notes for Behavioural and Cognitive Psychotherapy

### Instructions to Authors

1. **Submission.** Articles written in English and not submitted for publication elsewhere, should be sent to Paul Saikovskis, Editor, *Behavioural and Cognitive Psychotherapy*, Department of Psychiatry, University of Oxford, Warneford Hospital, Oxford OX3 7JX, UK.

2. **Manuscript preparation.** Four complete copies of the manuscript must be submitted. Original figures should be supplied at the time of submission. Articles must be typed double-spaced throughout on standard sized paper (preferably A4) allowing wide margins all round. Where unpublished material, e.g. behaviour rating scales, therapy manuals, etc. is referred to in an article, copies should be submitted to facilitate review.

Manuscripts will be sent out for review exactly as submitted. Authors who want a blind review should mark two copies of their article "review copy" omitting from these copies details of authorship.

Abbreviations where used must be standard. The Systeme International (SI) should be used for all units; where metric units are used the SI equivalent must also be given. Probability values and power statistics should be given with statistic values and degrees of freedom (e.g.  $F(1,34) = 123.07, P < 0.001$ ), but such information may be included in tables rather than the main text.

Spelling must be consistent within an article, either using British usage (*The Shorter Oxford English Dictionary*), or American usage (*Webster's New Collegiate Dictionary*). However, spelling in the list of references must be literal to each original publication.

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- (b) **Summary.** This should summarize the article in no more than 200 words.
- (c) **Text.** This should begin with an introduction, succinctly introducing the point of the paper to those interested in the general area of the journal. Attention should be paid to the *Editorial Statement* which appears in the January and July issues at the back of the journal. References within the text should be given in the form Jones and Smith (1973). When there are three or up to and including five authors the first citation should include all authors; subsequent citations should be given as Williams *et al.* (1973). Authors with the same surname should be distinguished by their initials. The approximate positions of tables and figures should be indicated in the text. Footnotes should be avoided where possible.
- (d) **Reference notes.** A list of all cited unpublished or limited circulation material, numbered in order of appearance in the text, giving as much information as possible about extant manuscripts.
- (e) **References.** All citations in the text should be listed in strict alphabetical order according to surnames. Multiple references to the same author(s) should be listed chronologically, using a, b, etc., for entries within the same year. Formats for journal articles, books and chapters should follow these examples:  
BECKER, M. R. and GREEN, L. W. (1973). A family approach to compliance with medical treatment: A selective review of the literature. *International Journal of Health Education* 18, 173-192.  
THORP, R. G. and WETZEL, R. J. (1969). *Behaviour Modification in the Natural Environment*. New York: Academic Press.  
ROUSKIE, E. and LAZARUS, R. S. (1980). Coping theory and the teaching of coping skills. In P. O. Davidson and S. M. Davidson (Eds). *Behavioural Medicine: Changing Health Lifestyles*. New York: Brunner/Mazel.
- (f) **Footnotes.** The first, and preferably only, footnote will appear at the foot of the first page of each article, and subsequently may acknowledge previous unpublished presentation (e.g. dissertation, meeting paper) financial support, scholarly or technical assistance, or a change in affiliation. Its concluding (or only) paragraph must be the name and full mailing address of the author to whom reprint requests or other inquiries should be sent.
- (g) **Tables.** Tables should be numbered and given explanatory titles.
- (h) **Figure captions.** Numbered captions should be typed on a separate page.
- (i) **Figures.** Original drawings or prints must be submitted for each line or half-tone illustration. Figures should be clearly labelled and be camera-ready wherever possible.

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**PANIC ATTACK DIARY**

Name.....

Date.....

---

Situation	Physical Sensations	Rating of Severity (0-100)	Panic Freq. (Day)	Negative Interpret. (Rate Belief 0-100)	Rational Response Re-rate original belief 0-100)
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**EXPOSURE PRACTICE RECORD**

Name.....

Date.....

Exposure Target

Set target before going out and complete the card  
before and after each trip.

Task	Expected Anxiety (0-100)	Actual Anxiety (0-100)
------	--------------------------------	------------------------------

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1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

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**Appendix 6. Single Case Research Study 2. Parental non-compliance and the treatment of panic childhood encopresis.**

**Author notes for Behaviour Research and Therapy**

**Toilet Training Programme**

### *Information for Contributors*

*Behaviour Research and Therapy* incorporating *Advances in Behaviour Research and Therapy* will be published monthly.

Neither the Editors nor the publisher accept responsibility for the views or statements expressed by authors.

In order to expedite the selection and prompt publication of papers, we have decided to discontinue the practice of supplying copies of referee's reports. Correspondence regarding decisions reached by the editorial committee is not encouraged.

This journal should be cited in lists of references as *Behaviour Research and Therapy*.

#### *Manuscripts*

All manuscripts submitted for publication for the regular section of the journal and all scientific correspondence should be sent to the Editor: Dr S. RACHMAN, Department of Psychology, University of British Columbia, Vancouver, British Columbia, Canada V6T 1Z4. Manuscripts for the Behavioral Assessment Section should be sent to Dr S. TAYLOR, Department of Psychiatry, 2255 Wesbrook Mall, Vancouver, British Columbia, Canada V6T 2A1.

Manuscripts should be typewritten on *one side* of the paper, *double spaced* and in triplicate (one original and two carbon copies). The original manuscript and diagrams will be discarded one month after publication unless the publisher is requested to return original material to the author.

Manuscripts must be carefully checked and proof alterations—except printer's errors—should be minimal.

#### *Disks*

Authors are encouraged to submit a computer disk (5.25" or 3.5" HD/DD disk) containing the final version of the paper along with the final manuscript to the editorial office. Please observe the following criteria:

1. Send only hard copy when first submitting your paper.
2. When your paper has been refereed, revised if necessary and accepted, send a disk containing the final version with the final hard copy. Make sure that the disk and the hard copy match exactly.
3. Specify what software was used, including which release, e.g. WordPerfect 5.1.
4. Specify what computer was used (either IBM-compatible PC or Apple Macintosh).
5. Include the text file and separate table and illustration files, if available.
6. The file should follow the general instructions on style/arrangement and, in particular, the reference style of this journal as given below.
7. The file should be single-spaced and should use the wrap-around end-of-line feature, i.e. no returns at the end of each line. All textual elements should begin flush left; no paragraph indents. Place two returns after every element such as title, headings, paragraphs, figure and table call-outs.
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The title of the paper, the author's name and surname and the name and address of the institute, hospital etc. where the work was carried out, should be indicated at the top of the paper. Where possible, the Fax number of the corresponding author should be supplied with the manuscript, for use by the publisher.

*Summaries.* A summary, not exceeding 200 words, should be submitted on a separate sheet in duplicate. The summary will appear at the beginning of the article.

*Keywords.* Authors should include up to six keywords with their article. The controlled list of keywords is based on the APA list of index descriptors, however, authors may include one or two additional 'free' keywords if they wish to do so.

*References* should be prepared carefully using the *Publication Manual of the American Psychological Association* for style. They should be placed on a separate sheet at the end of the paper, double-spaced, and in alphabetical order.

References should be quoted in the text by giving the author's name, followed by the year, e.g. (Hersen & Barlow, 1976) or Hersen and Barlow (1976).

For *more than two* authors, all names are given when first cited, but when subsequently referred to, the name of the first author is given followed by the words "*et al.*" as for example—First citation: Nau, Caputo and Borkovec (1974) but subsequently, Nau *et al.* (1974).

*[continued opposite*



# BEHAVIOUR RESEARCH AND THERAPY

## incorporating BEHAVIORAL ASSESSMENT

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References to journals should include the author's name followed by initials, year, paper title, journal title, volume number and page numbers, e.g.

Singh, N. N. (1980). The effects of facial screening on infant self-injury. *Journal of Experimental Therapy and Experimental Psychiatry*, 11, 131-134.

or

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561-565.

References to books should include the author's name followed by initials, year, paper title, editors, book title, volume and page numbers, place of publication, publisher, e.g.

Brownell, K. D. (1984). Behavioural medicine. In C. M. Franks, G. T. Wilson, P. C. Kendall, & K. D. Brownell (Eds.), *Annual Review of Behavior Therapy* (Vol. 10, pp. 11-20). New York: Guilford Press.

*Footnotes*, as distinct from literature references, should be indicated by the following symbols: \*, †, ‡, §, ||, ¶, commencing anew on each page.

*Illustrations and diagrams* should be kept to a minimum: they should be numbered and marked on the back with the author's name. Captions accompanying illustrations should be typewritten on separate sheets. Diagrams and graphs must be drawn with Indian ink on stout paper or tracing linen.

Photographs and photomicrographs should be submitted unmounted and on glossy paper.

The following standard symbols should be used in line drawings since they are easily available to the printers:



Tables and figures should be constructed so as to be intelligible without reference to the text, each table and column being provided with a heading.

*Tables.* Captions should be typewritten together on a separate sheet. The same information should not be reproduced in both tables and figures.

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## TOILET TRAINING PROGRAMME

Name.....

Date (week commencing Monday).....

Code: T - taken to toilet    S - Soiled    + Defaecated appropriately

Please note where soiling took place as accurately as possible, what happened before and what were the consequences.

Time	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
7.45am							
8.00am							
8.15am							
8.30am							
8.45am							
9.00am							
9.15am							
9.30am							
9.45am							
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11.00am							
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11.30am							
11.45am							
12.00pm							
12.15pm							
12.30pm							
12.45pm							
1.00pm							

Time	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
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1.30pm							
1.45pm							
2.00pm							
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8.15pm							
8.30pm							

**Appendix 7. Single Case Research Study 3. Cognitive therapy for depression not responding to antidepressant medication.**

Author notes for Behavioural and Cognitive Psychotherapy



# Author notes for Behavioural and Cognitive Psychotherapy

## Instructions to Authors

1. **Submission.** Articles written in English and not submitted for publication elsewhere, should be sent to Paul Saikovskis, Editor, *Behavioural and Cognitive Psychotherapy*, Department of Psychiatry, University of Oxford, Warneford Hospital, Oxford OX3 7JX, U.K.

2. **Manuscript preparation.** Four complete copies of the manuscript must be submitted. Original figures should be supplied at the time of submission. Articles must be typed double-spaced throughout on standard sized paper (preferably A4) allowing wide margins all round. Where unpublished material, e.g. behaviour rating scales, therapy manuals, etc. is referred to in an article, copies should be submitted to facilitate review.

Manuscripts will be sent out for review exactly as submitted. Authors who want a blind review should mark two copies of their article "review copy" omitting from these copies details of authorship.

**Abbreviations** where used must be standard. The Systeme International (SI) should be used for all units; where metric units are used the SI equivalent must also be given. Probability values and power statistics should be given with statistic values and degrees of freedom (e.g.  $F(1,34) = 123.07, P < 0.001$ ), but such information may be included in tables rather than the main text.

**Spelling** must be consistent within an article, either using British usage (*The Shorter Oxford English Dictionary*), or American usage (*Webster's New Collegiate Dictionary*). However, spelling in the list of references must be literal to each original publication.

Details of style not specified here may be determined by reference to the *Publication Manual of the American Psychological Association* or the style manual of the British Psychological Society.

Articles should conform to the following scheme:

(a) **Title page.** The title should phrase concisely the major issues. Author(s) to be given with departmental affiliations and addresses, grouped appropriately. A running head of no more than 40 characters should be indicated.

(b) **Summary.** This should summarize the article in no more than 200 words.

(c) **Text.** This should begin with an introduction, succinctly introducing the point of the paper to those interested in the general area of the journal. *Attention should be paid to the Editorial Statement which appears in the January and July issues at the back of the Journal.* References within the text should be given in the form Jones and Smith (1973). When there are three or up to and including five authors the first citation should include all authors; subsequent citations should be given as Williams *et al.* (1973). Authors with the same surname should be distinguished by their initials. The approximate positions of tables and figures should be indicated in the text. Footnotes should be avoided where possible.

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THORP, R. G. and WETZEL, R. J. (1969). *Behaviour Modification in the Natural Environment*. New York: Academic Press.

ROSKIES, E. and LAZARUS, R. S. (1980). Coping theory and the teaching of coping skills. In P. O. Davidson and S. M. Davidson (Eds). *Behavioural Medicine: Changing Health Lifestyles*. New York: Brunner/Mazel.

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